ORDER NO. AD9407215C8

Service Manual

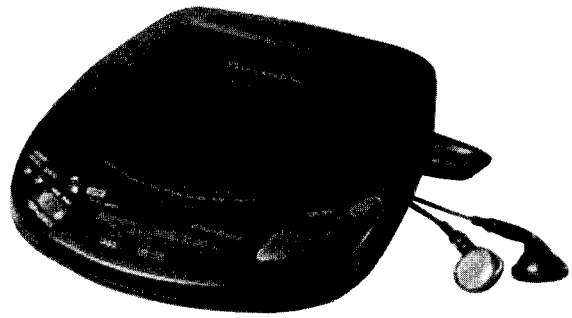
COMPACT disc DIGITAL AUDIO DIGITAL MASH* multi-stage noise shaping

Portable CD Player

SL-XP370

Colour

(K)... Black Type



Area

Suffix for Model No.	Area	Colour
(E)	Europe.	(K)
(EB)	Great Britain.	
(EG)	Germany and Italy.	
(GC)	Asia, Latin America, Middle Near East and Africa.	
(GN)	Oceania.	

TRAVERSE DECK: RAE0132Z MECHANISM SERIES

※ • Technics (or Panasonic) developed the world's first MASH type DAC and ADC. MASH technology was invented by NTT (LSI Labs).
• MASH is a trademark of NTT.

※※ These specifications were measured in the anti-shock memory OFF state.

■ SPECIFICATIONS

■ Audio

No. of channels: 2 channels (left and right, stereo)
Output voltage: 0.65V (50kΩ) φ3.5 stereo mini jack
Frequency response: 20~20,000Hz (+0.5dB, −1.5dB)
S/N: more than 96dB※※
Wow and flutter: Below measurable limit
Digital filter: 8 times over sampling
DA converter: MASH※ (1 bit, 4 DAC)
Headphone output level: max. 5mW+5mW/16Ω (variable) stereo mini jack φ3.5

■ Signal Format

Correction system: Technics New Super Decoding Algorithm

■ Pickup

Type: One beam
Light source: Semiconductor laser
Wavelength: 780nm
Lens: Glass pressed lens

■ Playing time;

(When the unit is used at 25°C on a flat and stable surface.)

Batteries used	Anti-shock memory OFF/ON
Rechargeable batteries	About 3 hours/ About 2 hours 30 minutes
Panasonic alkaline dry cell batteries	About 8 hours/ About 6 hours

The play time may be shorter depending on the operating conditions.

Recharging time; About 3 hours

■ General

Power requirement: AC; with an included panasonic AC adaptor
(RFEA401E-1S): (E, EG)
(RFEA404B-W): (EB)
(RFEA402Z-W): (GC)
(RFEA404A-W): (GN)
Batteries; 3V (two "AA" size batteries, not included)
(Panasonic R6P/LR6 or equivalent, not included)
Rechargeable Batterries; DC 2.4V with an optional Panasonic Rechargeable Batteries (SH-CDB8D) × 2
Car Battery; with an optional panasonic car adaptor (SH-CDC9)

DC IN: 4.5V

Power consumption:

Power source	Anti-shock memory OFF/ON
AC adaptor	4.5W/4.9W
Batteries	0.6W/1.0W

Dimensions (W × H × D): 130.1 × 28.7 × 155.5mm
Weight: 265g without batteries
305g with batteries

Note: Design and specifications are subject to change without notice.
Weight and dimensions are approximate.

Technics®

© 1994 Matsushita Electric Industrial Co., Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

■ CONTENTS

	Page
PRECAUTION OF LASER DIODE	2
LOCATION OF CONTROLS	3
ACCIDENTAL OPERATION PREVENTION FUNCTION	3
ACCESSORIES	3
POWER SOURCE	4
SEQUENTIAL PLAY	5
ANTI-SHOCK MEMORY FUNCTION	6
CHANGING THE TONE	6
USING THE UNIT WITH OPTIONAL ACCESSORES	6
HANDLING PRECAUTIONS FOR TRAVERSE DECK	7
OPERATION CHECKS AND MAIN COMPONENT REPLACEMENT PROCEDURS	8~10
CHECKING THE OPERATION PROBLEMS ON THE TRAVERSE DECK (OPTICAL PICKUP)	11
MEASUREMENTS AND ADJUSTMENTS	12, 13
DISPLAY FUNCTION OF AUTOMATICALLY-ADJUSTED RESULTS (SELF-CHECK FUNCTION)	13, 14
TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES	14
BLOCK DIAGRAM	15~18
SCHEMATIC DIAGRAM	19~22
PRINTED CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM	23~25
TERMINAL FUNCTION OF IC'S	26~30
REPLACEMENT PARTS LIST	31, 32, 35
PACKAGING	32
CABINET PARTS LOCATION	33
RESISTORS AND CAPACITORS	34, 35

■ PRECAUTION OF LASER DIODE

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.
Wave length: 780nm
Maximum output radiation power from pickup: 100μW/VDE

Laser radiation from the pickup lens is safety level, but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

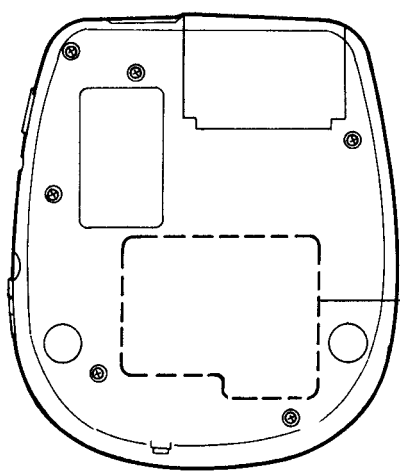
ACHTUNG: Dieses Produkt enthält eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

Wellenlänge: 780nm
Maximale Strahlungsleistung der Lasereinheit: 100μW/VDE

Die Strahlung an der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

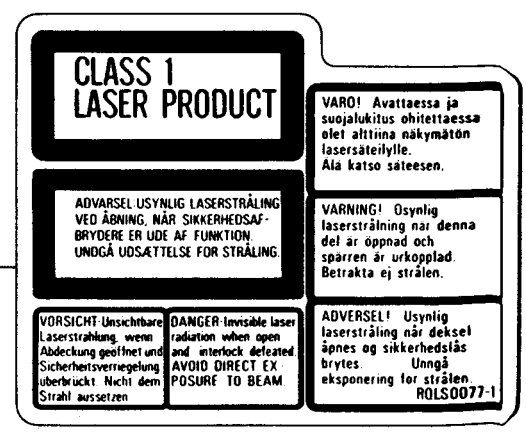
1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlines blicken.
4. Nicht über längere Zeit in die Fokussierlines blicken.

ADVARSEL: I dette a apparat anvendes laser.

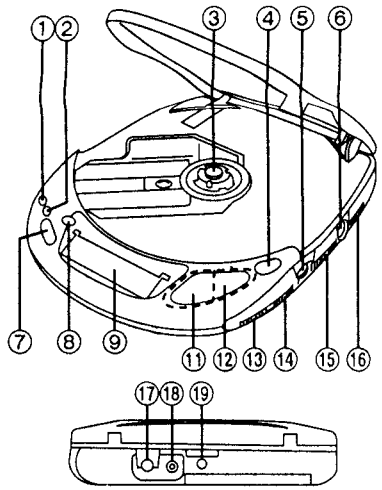


(Bottom side)

RQLS0077-1


CLASS 1
LASER PRODUCT
VARO! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymätön lasersäteilylle. Älä katso säteeseen.
ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARNING! Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.
VORSICHT: Unsichtbare Laserstrahlung, wenn Abdeckung geöffnet und Sicherheitsverriegelung überbrückt. Nicht dem Strahl aussetzen.
DANGER: Invisible laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.
ADVERSEL! Usynlig laserstråling når deksel åpnes og sikkerhedslås brytes. Unngå eksponering for strålen.
RQLS0077-1

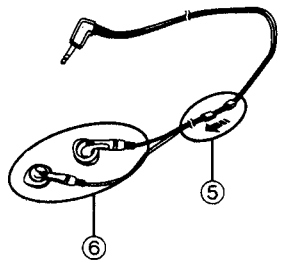
■ LOCATION OF CONTROLS



Portable CD Player

- ① **Memory/recall button (MEMORY/RECALL)**
- ② **Repeat button (REPEAT)**
- ③ **Push button (PUSH)**
- ④ **Open button (OPEN)**
- ⑤ **Headphones volume control (VOLUME)**
- ⑥ **Headphones jack (∩) 16Ω φ3.5**
- ⑦ **Skip/search buttons (I◀◀ -SKIP/–SEARCH ▶▶I)**
- ⑧ **Sound quality/field selector button (DSP)**
- ⑨ **Display**
- ⑪ **Play/pause button (▶II)**
- ⑫ **Stop/Operation off button (■/OPR OFF)**
- ⑬ **Hold switch (HOLD)**
- ⑭ **High filter switch (HIGH FILTER)**
- ⑮ **Play mode selector (MODE)**
- ⑯ **Anti-shock memory switch (ANTI-SHOCK MEMORY)**
- ⑰ **Out jack (OUT)**
- ⑱ ***DC in jack (DC IN 4.5V*** ⟐⊖⊂⊕⟐ **)**
- ⑲ **Hole for car mounting base**

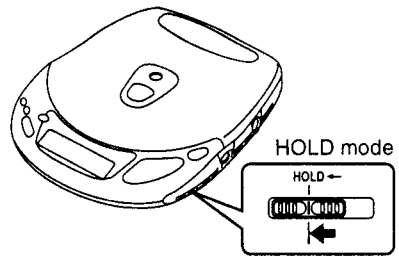
[For (GC, GN) areas.]



Stereo earphones

- ⑤ **Slider**
  Slide up to prevent entangling of the cord when the stereo earphones are not in use.
- ⑥ **Ear piece**

■ ACCIDENTAL OPERATION PREVENTION FUNCTION



This function prevents the unit from operating even if a control button is pressed in error. (The disc lid can still be opened and closed.)
Use the function to prevent the following situation:
Example 1:
While the unit is not in use, the power is inadvertently turned on and the batteries run down.

Example 2:
Play is interrupted while the unit is in use.

To use the accidental operation prevention function

Set HOLD to the HOLD position.

Before operating the buttons
Be absolutely sure to move HOLD to release the unit from the hold mode.

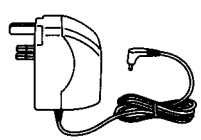
HOLD indicator

If the unit is in the hold mode, the "hold" indicator appears when any of the unit's control buttons is pressed.

When the unit is turned off
The display appears only when ▶ II is pressed.

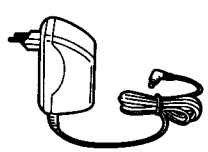
■ ACCESSORIES

①-ⓐ



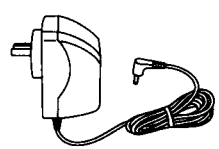
① AC adaptor ..... 1 pc.
ⓐ [For (EB) area.]
RFEA404B-W

ⓑ



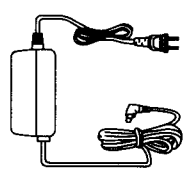
ⓑ [For (E, EG) areas.]
RFEA401E-1S

ⓒ



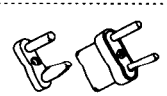
ⓒ [For (GN) area.]
RFEA404A-W

ⓓ



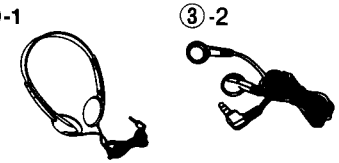
ⓓ [For (GC) area.]
RFEA402Z-W

②



② Power plug adaptor ..... 1 pc.
(RJP120ZDS-K)
[For (GC) area.]

③-1 ③-2



③-1 Stereo headphones ..... 1 pc.
(RP-HT103DTYS)
[For (E, EB, EG) areas.]

③-2 Stereo earphones..... 1 pc.
(RFEV307A-KA)
[For (GC, GN) areas.]

④

④ Stereo connection cable ..... 1 pc.
(RJL2P001X10)
[For (GC, GN) areas.]

■ POWER SOURCE

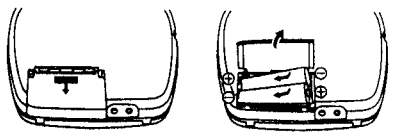
Using rechargeable batteries

Make sure that the rechargeable batteries have been recharged before use.

Recharging procedure

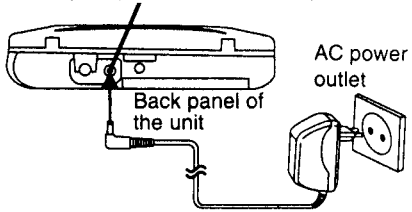
1 Place the rechargeable batteries inside the unit.

(No batteries other than RP-BP60/SH-CDB8D can be recharged.)



2 Connect the AC adaptor.

DC IN jack (DC IN 4.5V ⊖⊂⊕)



It takes about 3 hours to fully recharge the batteries.

- A 2-tier recharging system is used under which the batteries can be used for about 2 hours (Anti-shock memory off.) with an hour or so of recharging.

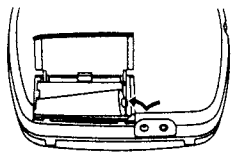
Recharging indicator (this lights on the display)

During recharging		Upon completion of recharging
Flashes.	Provides about 2 hours of play. (Anti-shock memory off.)	Provides about 3 hours of play in the hold mode.

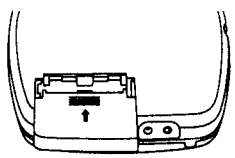
3 Upon completion of the recharging, disconnect the AC adaptor from the DC IN jack and power outlet.

Removing the batteries

Push the batteries upward in the direction of the arrow to remove them.



If the battery compartment lid becomes disengaged, position it horizontally and press it back into position.



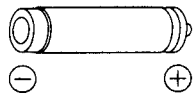
- The batteries can be used for about 10 months (300 times) if they are used every day. They will need to be replaced if the duration of their operation drops drastically.
- The batteries cannot be recharged during play or in the standby mode .
- Recharging should be performed at 0°C~40°C.
- While recharging, the AC adaptor and rechargeable batteries may get warm. This is normal.

As a safety precaution, the portable CD players made by Panasonic have a construction designed to make it impossible to recharge ordinary batteries.
To use rechargeable batteries, be absolutely sure to purchase the rechargeable Ni-Cd batteries designed especially for this unit.

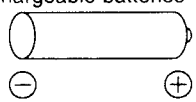
Special rechargeable Ni-Cd batteeries: SC-CDB8D (set of 2)

For details, check with your dealer.

Special rechargeable batteries



Ordinary dry cell batteries/ rechargeable batteries



Using dry cell batteries (not included)

Disconnect the AC adaptor and then install two LR6 (UM-3) type alkaline batteries.

The batteries are inserted and removed in the same way as for the rechargeable batteries.

To prevent damage to the batteries and electrolyte leakage, heed the following points.

- Align the ⊕ and ⊖ polarities properly when inserting the batteries.
- Do not mix different types or makes of batteries or old and new batteries.
- Remove the batteries if you do not plan to use the unit for a long period of time.
- Do not throw batteries into a fire, and do not short-circuit, disassemble or subject them to excessive heat.
- Do not attempt to recharge dry cell batteries.
- Do no peel off the plastic covering on the rechargeable batteries. Short-circuiting may occur which is dangerous.

Using the AC adaptor

Connect the AC adaptor supplied.
Refer to the section on "Using rechargeable batteries" for details on the connections.

Note

The unit is in the standby condition when the AC adaptor is connected. The primary circuit is always "live" as long as the AC adaptor is connected to an electrical outlet.

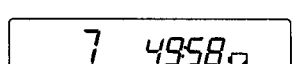
- Handle the AC adaptor carefully. Improper handling is dangerous.
  - Do not touch it with wet hands.
  - Do not place heavy objects on top of it.
  - Do not forcibly bend it.
- Be sure to connect only the AC adaptor provided with the unit.
- Disconnect the AC adaptor from the power out-let if the unit is not going to be used for a long time.

Battery indicator

This starts flashing when the batteries have run down, and after a short while the power is automatically cut off.
(The amount of time during which play continues after the indicator has started flashing differs slightly depending on the type of batteries used.)

Type of battery	Action
Rechargeable batteries	Recharge the batteries again.
Dry cell batteries	Replace with new batteries.

(The battery indicator may not flash if rechargeable batteries other than those designated by our company are used.)



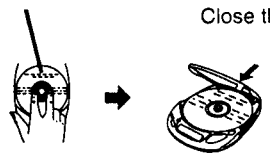
■ SEQUENTIAL PLAY

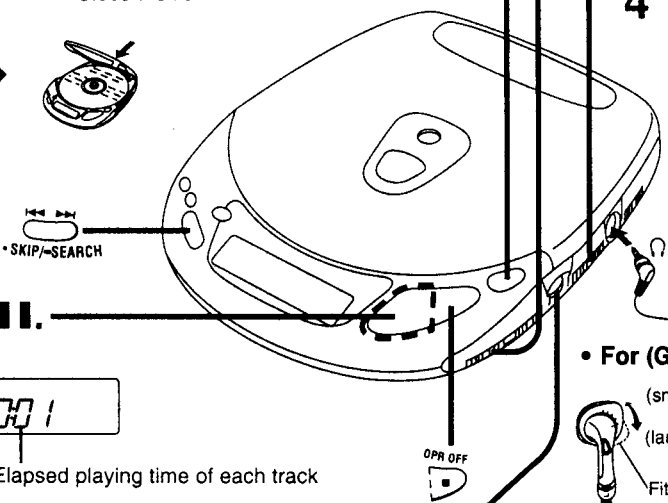
1 Press OPEN to open the lid, and insert the disc.

Press the area near the center hole of the disc until it clicks into position.

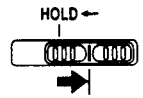
Label must face upward.

Close the lid.

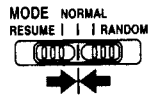




2 Release the hold mode.

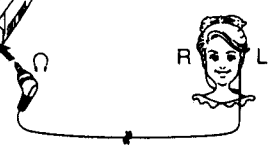


3 Set MODE to NORMAL.



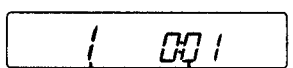
4 Connect the stereo earphones/ headphones to the ∩ jack.

(Plug in firmly)



5 Press ▶ II.

Play now starts.



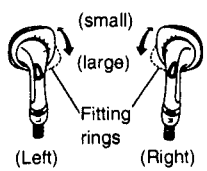
Track number in play — Elapsed playing time of each track

Play stops automatically when all the tracks have been played.

6 Adjust the volume level.

(If the unit has been connected to the car audio system, adjust the volume level on the system.)

• **For (GC, GN) areas.**



Ear piece

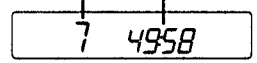
Adjust the size to your ears.
Slide the fitting rings to the "large" position if the earphones jiggle about inside your ears; slide them to the "small" position if they fit too tightly for comfort.

Operation	Button
Stopping play	■
Pause: press again to resume play.	▶ II
Skip forward/backward (skip function): tap during play.	▶▶I: Forward direction I◀◀: Backward direction
Rapid forward/backward (search function): keep depressed during play.	

Standby mode

Press ■/OPR OFF during play. Standby is a mode during which the disc stops rotating and the total number of tracks and the total playing time are displayed.

Total number of tracks Total playing time



Automatic Shut-OFF function

When the unit is left for about 10 minutes in the standby or pause mode, this function automatically shuts off the power in order to prevent the rechargeable batteries, etc. from discharging needlessly.

For your reference:

"no dISC" display

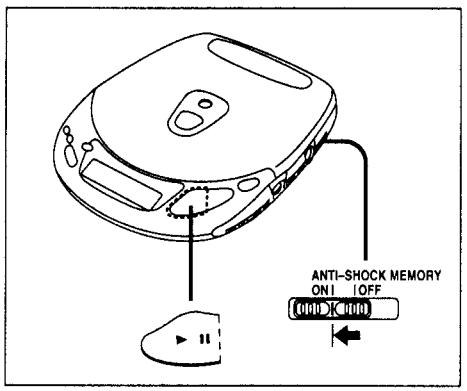
This appears for about 30 seconds when a disc has not been inserted or when a disc has not been inserted properly and then ▶ II is pressed.

" OPEN " display

This appears for about 10 minutes after the lid is opened. (It does not appear when the unit is turned off.)

■ ANTI-SHOCK MEMORY FUNCTION

This function minimizes sound interruptions due to vibration when listening to a disc while walking about or in a moving vehicle or train.



Once the anti-shock memory function has been activated, play data of up to 3 seconds can be stored in the memory.
Therefore, even if the unit sustains an external impact, the data stored in the memory is sent to minimize sound interruptions during play.

1 Set ANTI-SHOCK MEMORY to ON.

2 Press ► II.
The function starts to store the play data, and the MEMORY RESERVE indicator on the display shows how much data is stored.

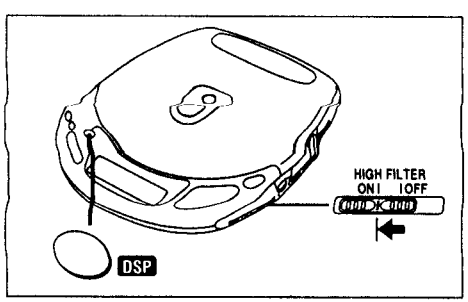
Notes

- The ANTI-SHOCK MEMORY switch can be set during play but doing so will produce a slight gap in the sound due to a change in the disc speed.
- While the anti-shock memory function is on, the life span of the batteries is shortened and sound made by the rotation of the disc increases somewhat because the disc rotates faster and the play data is stored.

MEMORY RESERVE indicator

Unit mode	Play mode (play data mode)	MEMORY RESERVE mode
Stable	Sound is heard (sufficient data has been stored).	
Unit sustains a shock.	Sound is heard (stored data is used).	
Shock subsides.	Sound is heard (data storage commences).	
Unit sustains a continuous shock.	Sound is interrupted (no more data is stored).	Sorry

■ CHANGING THE TONE



To change to the HIGH FILTER position

Set HIGH FILTER to ON.
This reduces noise leakage which is unpleasant to other passengers on trains or other public transport and fatigue to the ears when the unit is used for long periods of time.

Changeing the sound quality/sound field setting

DSP: Digital signal processor

Press DSP.
Each time this button is pressed, the setting changes in the esquence given below:
OFF → HALL → LIVE → Church → S-XBS

When DSP is used after the setting, the present DSP mode is displayed for 2 seconds.

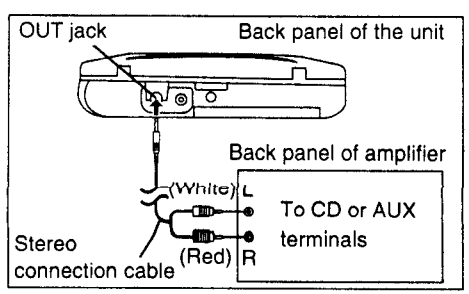
For your reference:
- When the unit is turned off, DSP mode becomes off.

OFF	Releases the DSP.	OFF
HALL	Extends the sound so as to give the atmosphere of a large hall.	HALL
LIVE	Sets the kind of atmosphere generated when sound is heard in a concert hall.	LIVE
Church	Provides the sound with ample reverberation which is reminiscent of a church.	Church
S-XBS	Lends an extra "punch" to the deep bass.	S-XBS

■ USING THE UNIT WITH OPTIONAL ACCESSORIES

Using the unit with an audio system

Using the stereo connection cable (RP-CA119A), you can hear CDs on your audio system.
- Connect the cable to the amplifier after turning off its power.
- Do not connect the cable to the PHONO jacks on the amplifier.
- Obtain the optional connecting cable (RP-CA102A) if the amplifier comes with mini-phone jacks.



Using the unit with a car stereo

Items to be purchased

For connection to the car audio system:
Car stereo cassette adaptor (SH-CDM9/ SH-CDM9D)

For securing the unit and connecting the power supply:
- Car adaptor (SH-CDC9)
- Car mounting kit (SH-CDF20)
  Car mounting arm, Car mounting base

Note

It may not be possible to use the unit with some types of car stereos owing to restrictions imposed by the construction of the car stereo cassette adaptor.

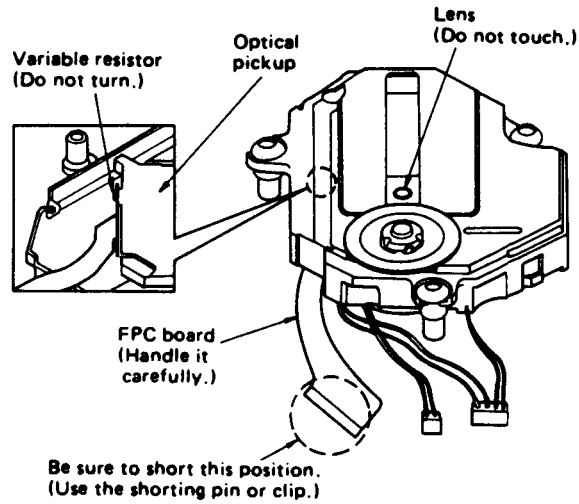
For further details, refer to the instructions of the part concerned.

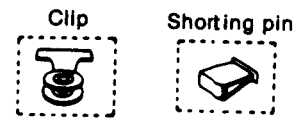
■ HANDLING PRECAUTIONS FOR TRAVERSE DECK

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

• Handling of traverse deck (optical pickup)

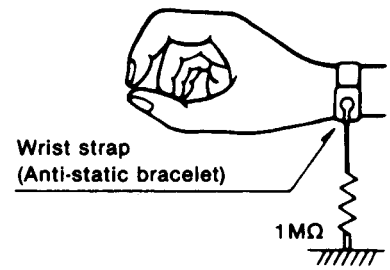
1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC board).
   When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.





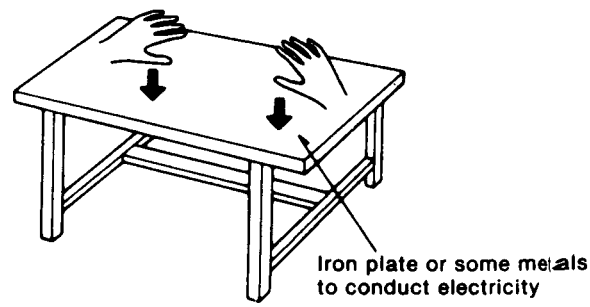
• Grounding for electrostatic breakdown prevention

1. Human body grounding.
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.



Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



■ OPERATION CHECKS AND MAIN COMPONENT REPLACEMENT PROCEDURES

Warning: This product uses a laser diode. Refer to caution statements on page 2.

ACHTUNG: •Die lasereinheit nicht zerlegen.
•Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

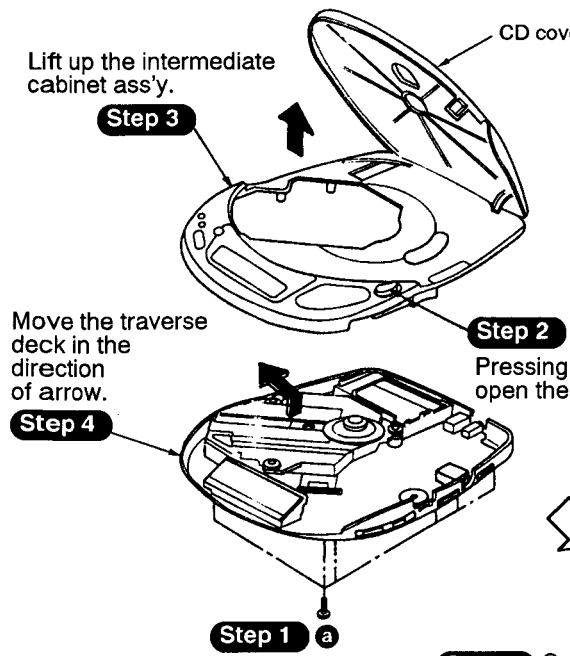
NOTE

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**
3. **Illustrated screws are equivalent to actual size.**
4. **[ ] indicates parts No.**

1. Checking for the P.C.B.

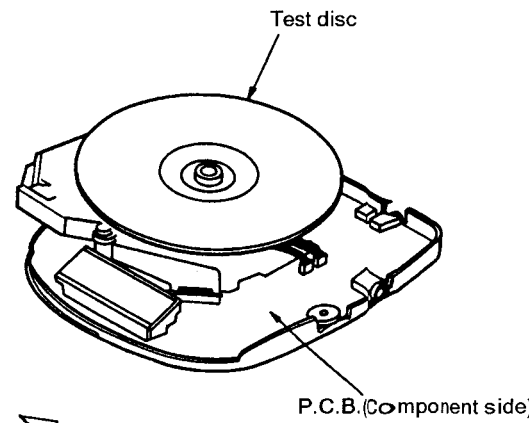
ⓐ [XTN17+6GFZ] (Black)

Operation check for the main P.C.B.(Component side)

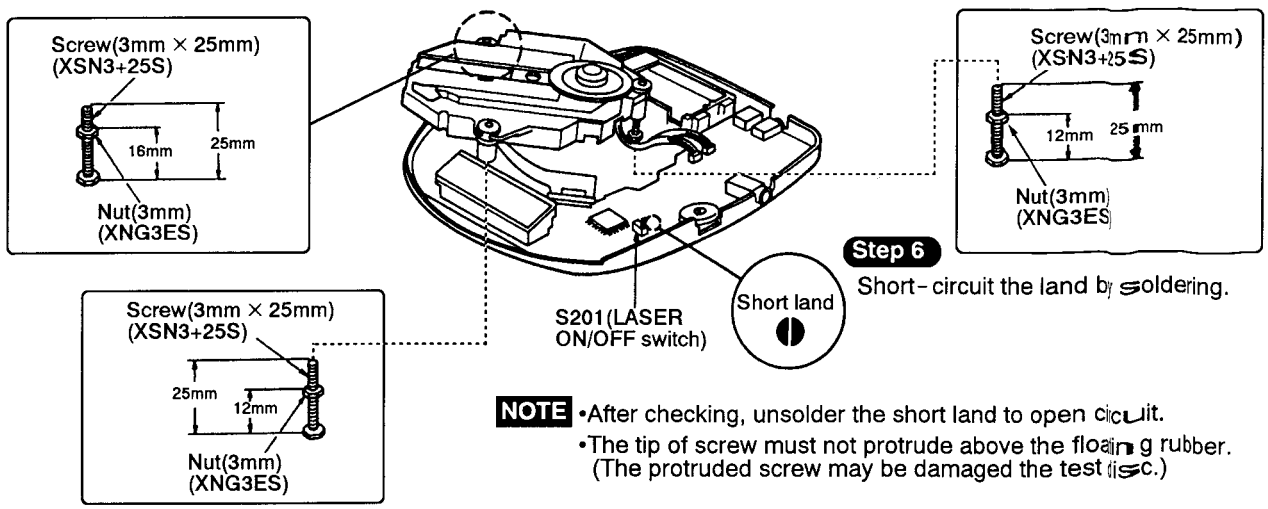


Pressing the OPEN button, open the CD cover ass'y.

•Check the P.C.B. (Component side) as shown below.



Step 5 Sustain the traverse deck with the floating rubber inserted screws and nuts as shown below.



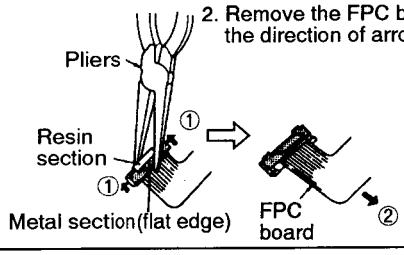
Step 6 Short-circuit the land by soldering.

NOTE •After checking, unsolder the short land to open circuit.
•The tip of screw must not protrude above the floating rubber. (The protruded screw may be damaged the test disc.)

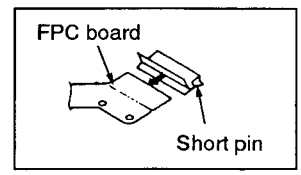
2. Replacement of the traverse deck

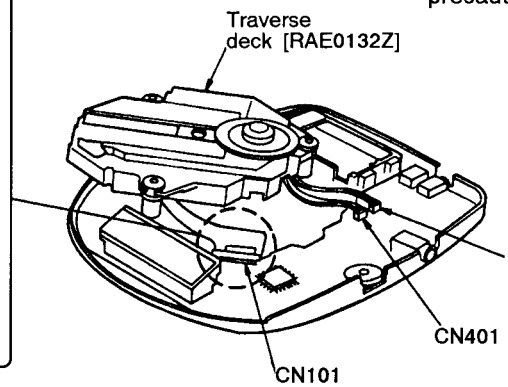
•Follow the Step 1 ~ Step 4 in item 1.

How to remove the FPC board.
1. Nip the metal and resin sections of the connector with a pair of pliers and then move the metal section in the directon of arrows ①.
Note: The flat edge of the metal section must be nipped.
2. Remove the FPC board in the direction of arrow ②.



Caution:
Insert a short pin into the traverse deck's FPC board. (Refer to "handling precautions for traverse deck" on page 7.)



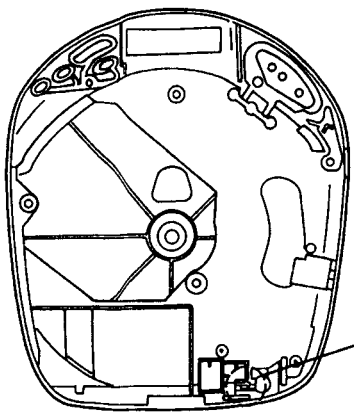


Step 1
Remove the connectors.

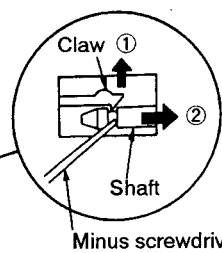
3. Replacement of the traverse deck

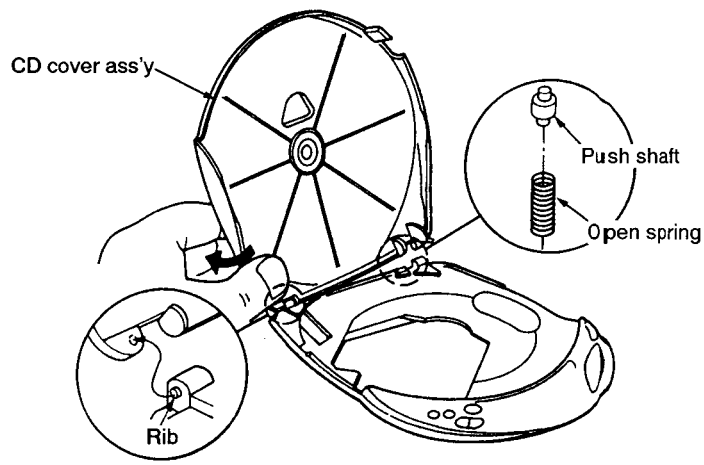
NOTE When the CD cover ass'y is removed, the push shaft and the open spring will also be removed. Be careful not to loose them.

•Follow the Step 1 ~ Step 3 in item 1.



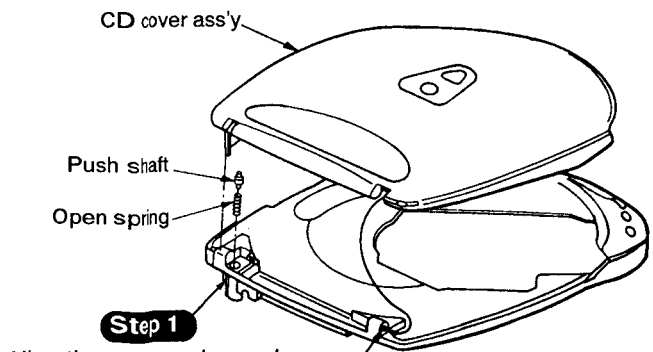
Step 1
Remove the shaft.





Step 2
Remove the CD cover ass'y from rib.

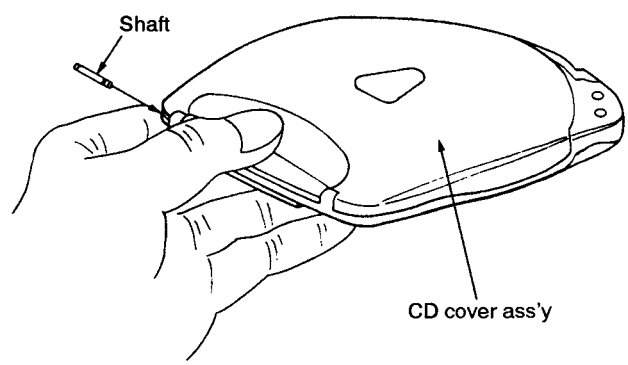
Reassembly procedures of CD cover ass'y



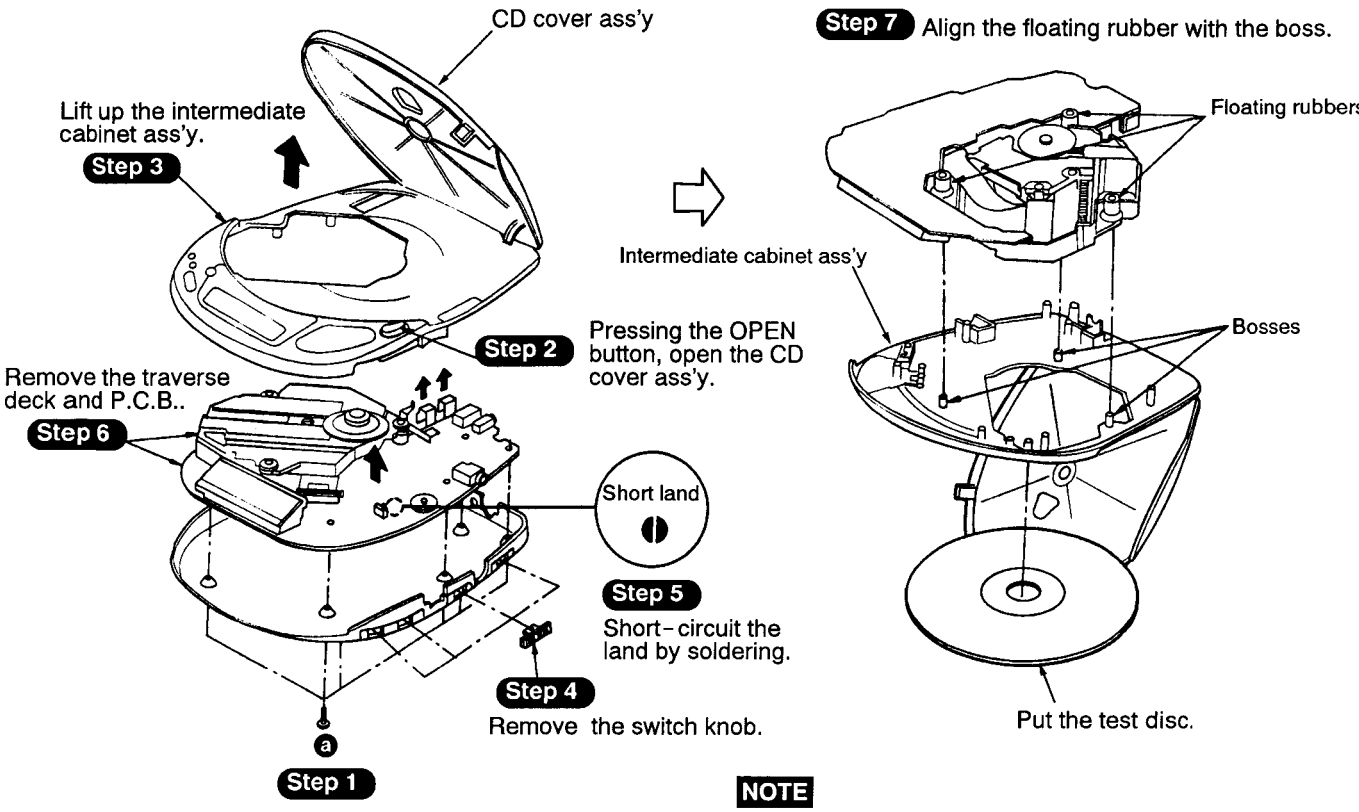
Step 1
Align the open spring and the push shaft with the hole.

Step 2
Align the CD cover ass'y with the rib.

Step 3
Holding the CD cover ass'y not to be detached the open spring and the push shaft, install the shaft.



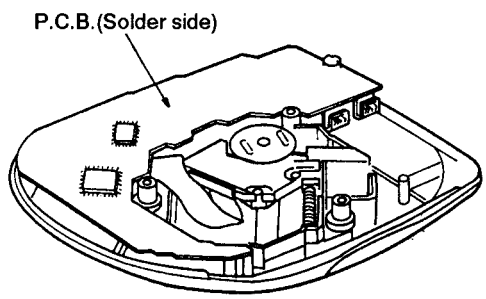
Operation check for the P.C.B.(solder side)



NOTE

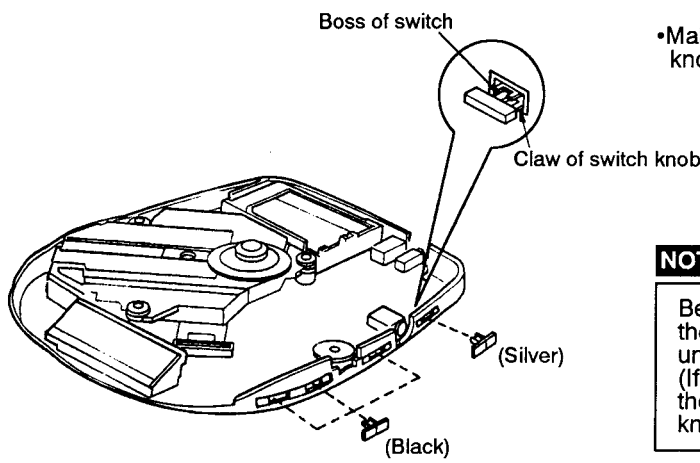
After checking, unsolder the short land to open circuit.

•Check the P.C.B. (Solder side) as shown below.



a
(XTN17+6GFZ) (Black)

Notice for installation of switch knobs



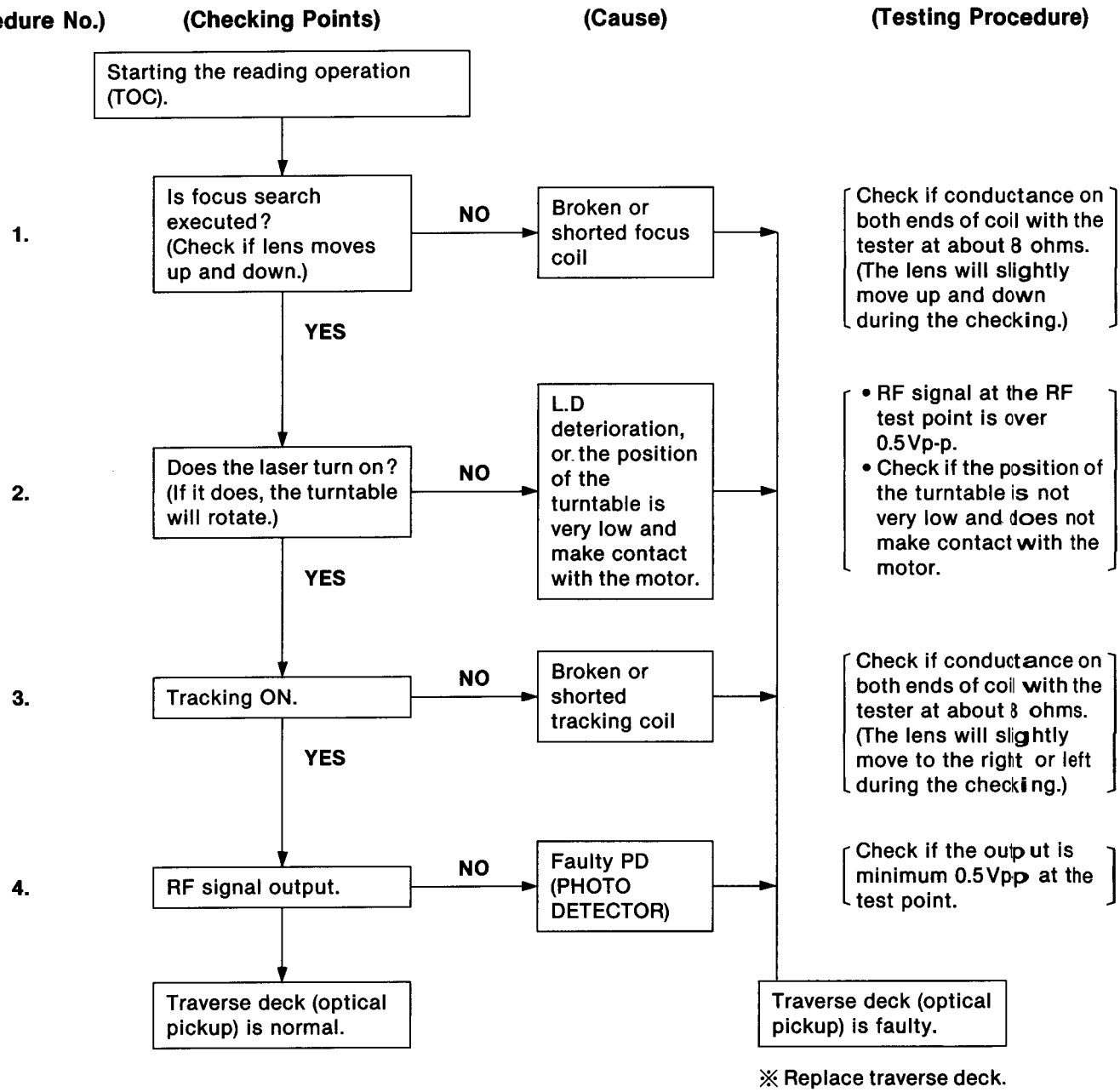
•Make sure the bosses of switch are fit in the knobs of switch.

NOTE

Before installing the switch knob, be sure to check the claws for defects that would render the claws unserviceable.
(If a white line like white wax on a claw is found, the claw may be broken when installing the switch knob.)

■ CHECKING THE OPERATION PROBLEMS ON THE TRAVERSE DECK (OPTICAL PICKUP)

Make sure to follow the procedures below to check the operation problems of the traverse deck (optical pickup) before replacing it. Replace the traverse deck only after the problem is identified.


(Procedure No.)
(Checking Points)
(Cause)
(Testing Procedure)
Starting the reading operation (TOC).
1.
Is focus search executed? (Check if lens moves up and down.)
NO
Broken or shorted focus coil
Check if conductance on both ends of coil with the tester at about 8 ohms. (The lens will slightly move up and down during the checking.)
YES
2.
Does the laser turn on? (If it does, the turntable will rotate.)
NO
L.D deterioration, or the position of the turntable is very low and make contact with the motor.
• RF signal at the RF test point is over 0.5Vp-p.
• Check if the position of the turntable is not very low and does not make contact with the motor.
YES
3.
Tracking ON.
NO
Broken or shorted tracking coil
Check if conductance on both ends of coil with the tester at about 8 ohms. (The lens will slightly move to the right or left during the checking.)
YES
4.
RF signal output.
NO
Faulty PD (PHOTO DETECTOR)
Check if the output is minimum 0.5Vpp at the test point.
Traverse deck (optical pickup) is normal.
Traverse deck (optical pickup) is faulty.
※ Replace traverse deck.

- Check electrical circuit.
- Check for flaws on disc or if it is warped or not centered.

• Check the operations described below on the traverse deck after replacing it.

* Checking Skip Search
1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

* Checking Manual Search
1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

* Checking Playability
1. Play the 0.7mm black dot and the 0.7mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

■ MEASUREMENTS AND ADJUSTMENTS

Warning: This product uses a laser diode. Refer to caution statements on page 2.
ACHTUNG: • Die lasereinheit nicht zerlegen.
• Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

• Measuring instruments and special tools

• Test discs

1. Playability test disc (SZZP1054C)
2. Uneven test disc (SZZP1056C)

- Musical program disc (ordinary)
- DC voltmeter
- Lead wire (for test points)

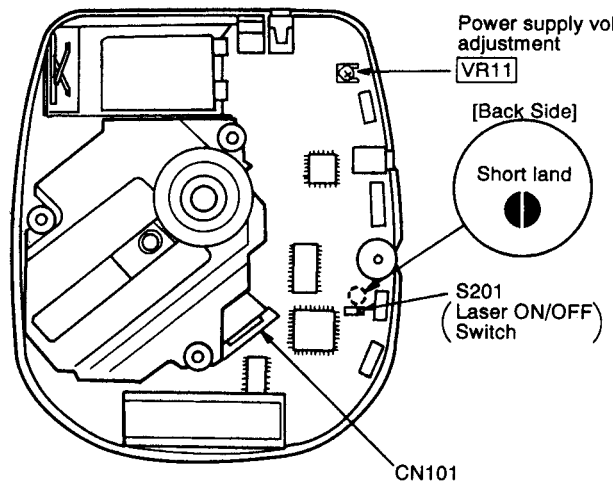
• Test short land

Short-circuit the lands of the laser ON/OFF switch (S201) by soldering them. It turns "ON" position. (Refer to below figure or printed circuit board and wiring connection diagram for short land location on pages 23~25.)

Note: Remove the solders from the lands after adjustment.

• Adjustment point

Notes: 1. Please refer to the printed circuit board and wiring connection diagram for test point locations.
2. Take care to connect CN101.



• Adjustment procedure

(1) POWER SUPPLY VOLTAGE ADJUSTMENT

1. Connect the DC voltmeter to TP103 (VCC) (+) and TP104 (GND) on the P.C.B.
2. Connect the AC adaptor cord to the DC (IN) port and move the PLAY switch to the ON position. (Use a new dry cell battery or a rechargeable battery that is full charged.)
3. Insert the test disc, and switch the player power ON.
4. Adjust **VR11** on the P.C.B. at **3.54±0.02V**.

(2) CHECK OF PLAY OPERATION

∗ Checking Skip Search

1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and backward directions).

∗ Checking Manual Search

1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and backward directions).

∗ Checking Playability

1. Play the 0.7mm black dot and the 0.7mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

• Automatic adjustment

On our conventional type portable CD player, there were mounted 6 semi-fixed controls for each adjustment. Since the SL-XP370 servo circuit is equipped with an automatic adjusting circuit, these controls are removed from SL-XP370.

On conventional portable CD player Use for Old Servo IC (AN8373SE2, AN8374SE2)		**On SL-XP370** Use for New Servo IC (AN8832SBE1, MN662740RE)
1. Tracking Offset Adjustment VR (TOC) 2. Focus Offset Adjustment VR (FOC)	➡	Non Adjustment
3. Tracking Gain Adjustment VR (TGC) 4. Focus Gain Adjustment VR (FGC) 5. Tracking Balance Adjustment VR (TBC) 6. Focus Balance Adjustment VR (FBC)	➡	Automatic Adjusting Circuit
Total 6 Adjustment VRs	➡	No Adjustment VR

Although all discs are manufactured according to the same specifications, their characteristics are not always precisely the same because they are produced by different manufacturers in various lots, or have different warp etc.
SL-XP370 automatically controls the servo circuit to obtain optimum performance according to any disc's characteristics. Therefore, no malfunction occurs because of mis-adjustment.

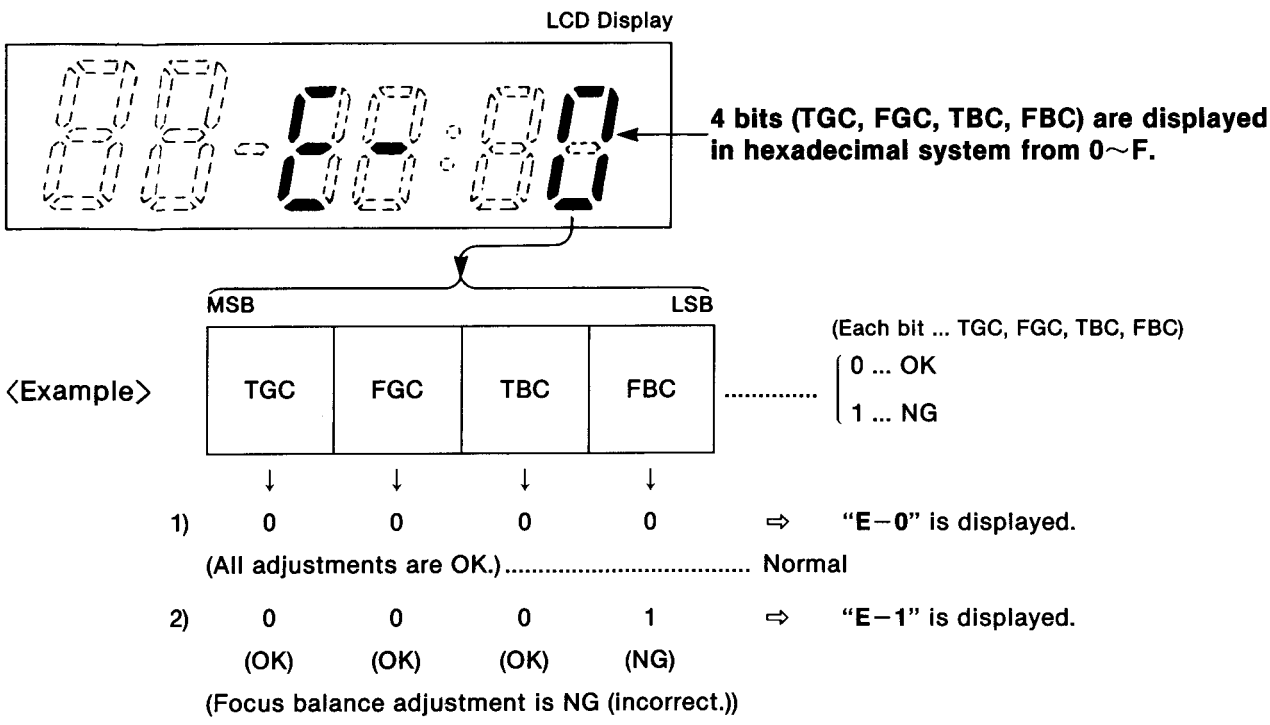
■ DISPLAY FUNCTION OF AUTOMATICALLY-ADJUSTED RESULTS (SELF-CHECK FUNCTION)

On this unit (SL-XP370), each automatically-adjusted result are displayed on the LCD. This function is convenient to check or identify which automatic adjustment circuit is incorrect. The followings are the contents of the automatically-adjusted result displays (self-check function).

• How to display automatically-adjusted results

1. Load the test disc (SZZP1054C).
2. Press the I◀◀ (SKIP/SEARCH) and ▶▶I (SKIP/SEARCH) Buttons simultaneously and hold them, and additionally press the ▶/II (PLAY/PAUSE) Button.
3. Press the ■ (STOP/OPR OFF) Button once.
4. An automatically-adjusted result is displayed on the LCD.

• Display of automtically-adjusted results (self-check function)


LCD Display
4 bits (TGC, FGC, TBC, FBC) are displayed in hexadecimal system from 0~F.
MSB
LSB
(Each bit ... TGC, FGC, TBC, FBC)
0 ... OK
1 ... NG
<Example>
TGC
FGC
TBC
FBC
1) 0 0 0 0 ⇨ "E−0" is displayed.
(All adjustments are OK.) ..... Normal
2) 0 0 0 1 ⇨ "E−1" is displayed.
(OK) (OK) (OK) (NG)
(Focus balance adjustment is NG (incorrect.))

3) 0 (OK) 1 (NG) 0 (OK) 0 (OK) ⇨ "E−4" is displayed.
(Focus gain adjustment is NG.)

4) 1 1 1 1 ⇨ "E−F" is displayed.
(All adjustments are NG.)

〈Example〉 **Follow the below steps when "E−1" is displayed.**

(Cause: Focus balance (TBC) is set beyond the limit.)
• Check if
(1) R101 (4 resistors) is not defective by measuring the value,
(2) the waveform or voltage of the focus servo circuit is correct, and
(3) the optical pickup returns to the normal state by exchanging the traverse deck.

Follow the below steps when "E−4" is displayed.

(Cause: Focus gain (FGC) is set beyond the limit.)
• Check if
(1) the waveform or voltage of the focus servo circuit is correct,
(2) the focus coil of the optical pickup is correct (around 8 ohms), and
(3) the optical pickup returns to the normal state by exchanging the traverse deck.

Follow the below steps when "E−F" is displayed.

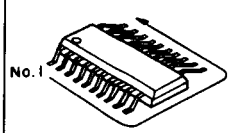
(Cause: All adjustments (TGC, FGC, TBC, FBC) are set beyond the limit.)
• Check if
(1) the optical pickup returns to the normal state by exchanging the traverse deck, and
(2) the waveform or voltage of the servo IC's (IC101, 501) are correct.

Note:
It is not always necessary to exchange the traverse deck when an error message is displayed. Be sure to check if the circuit is defective or not before exchanging the traverse deck.

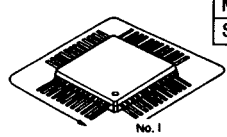
Note:
If any other disc than the test disc (SZZP1054C) is used, an error message may be displayed. This is not a malfunction.

■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

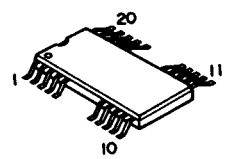
NJM3415MTE1	8Pin
AN8832SBE1	28Pin



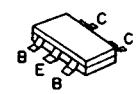
AN8819FB	44Pin
SM-5855AF	44Pin
MN662740RE	80Pin
SC424656FU	80Pin



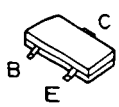
UPD4244GIRJE



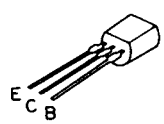
FMG4T148
FMG6T148
FMG8T99



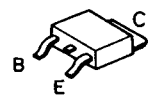
2SB970RSTX
2SB1218QRSTX
2SD1328RSTTX
2SD1819QRSTX
UN5114TX
UN5213TX
UN5215TX
DTA143TUT107



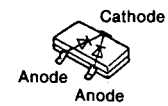
2SD1302STTA



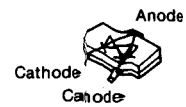
2SD1758TLPQR



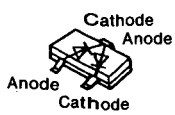
MA141WKTX



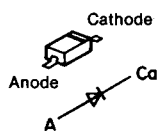
MA141WATX



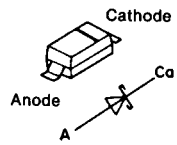
MA143TX



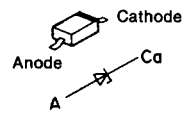
MA110TX



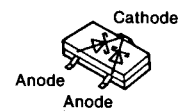
D1FS4



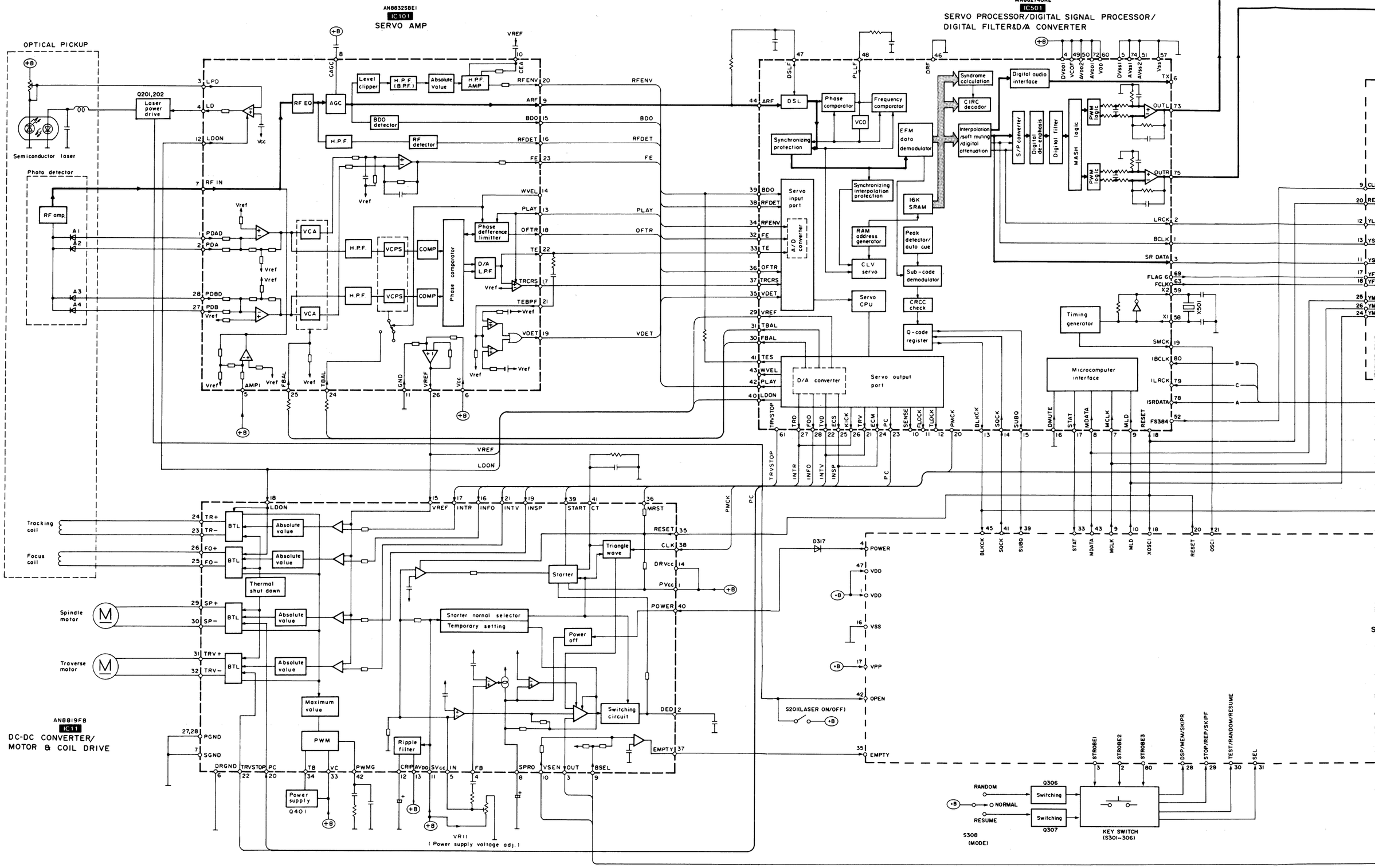
MA8039TX



RB411DT147



■ BLOCK DIAGRAM



UPD4244GIRJE
IC503
4M DRAM

SM-5855AF
IC502
SHOCK PROOF CONTROLLER

DRAMC
ADRG (WAS RAS DSPDL1 DSPDL2)
DRAMIF
MAC
GROM
SRAMBLK
MAXSEL
CROM
KREG
CLKG TEST
A/DCHECK (OVF EXP RAC DC)
PSCV SDSEL
SIPOBLK
OPISOBLK
SPCV
DSPIF
CPUIF
SYSCN
UDCOUNT
CONTROL
SHPRF
DSP

SC424656FU
IC301
SYSTEM CONTROL/LCD DRIVE

S501 (ANTI-SHOCK MEMORY) OFF ON
S502 (HIGT FILTER) ON OFF

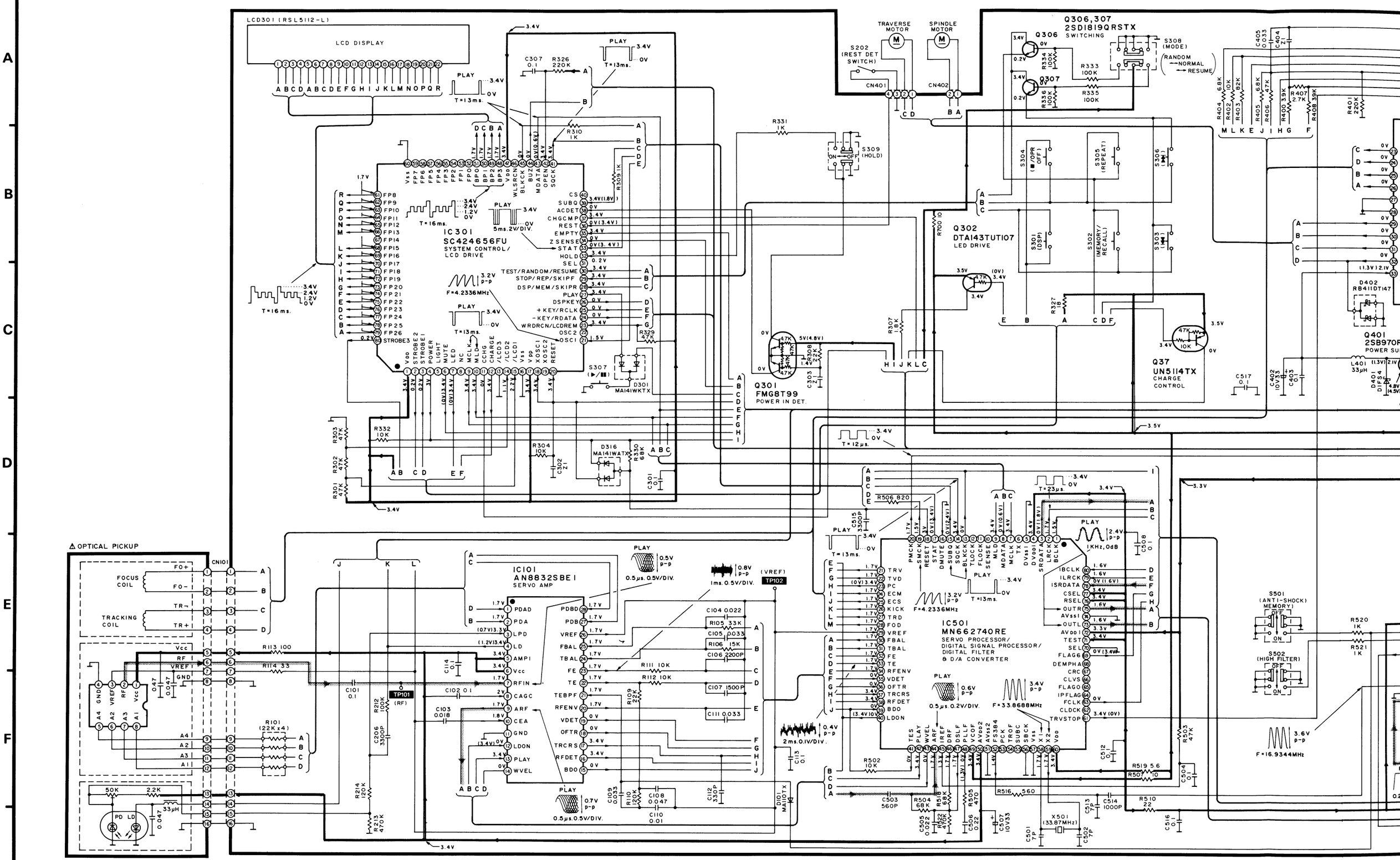
Q603,705 Switching/muting
Q601,602 Muting drive
OUT
NJM3415MTE1 IC701(1:2)
Headphones amp
Q703 Switching
VR701 (VOLUME)
Q701,702 Muting drive
HEADPHONES
Q906,907 Muting control
Q901 Remote Control

Q11 Regulator
L12
L11
D11
DC IN
Q12,14 Switching
ICP11
BATT 3V
Q31~36 Charge control
Q15 Switching

Q37 Charge control
S307(▷/II PLAY/PAUSE)
D301
S202(REST DET.)

Q302 LED drive
D310,311,314 (▶/II, ■)
Q301 Power in det.
S309(HOLD)
LCD301 LCD DISPLAY

Note: ➡ Audio signal


LCD301 (RSL5112-L)
LCD DISPLAY
IC301
SC424656FU
SYSTEM CONTROL/
LCD DRIVE
Q306,307
2SD1819QRSTX
SWITCHING
Q306
Q307
Q302
DTA143TUTI07
LED DRIVE
Q301
FMG8T99
POWER IN DET.
Q37
UN5114TX
CHARGE
CONTROL
Q401
2SB970R
POWER SU
S202
(REST DET
SWITCH)
TRAVERSE
MOTOR
SPINDLE
MOTOR
S308
(MODE)
RANDOM
NORMAL
RESUME
S309
(HOLD)
S304
(■/OPR
OFF)
S305
(REPEAT)
S306
(▶)
S301
(OSP)
S302
(MEMORY/
RECALL)
S303
(◀◀)
S307
(▶/■)
D301
MA141WKTX
D316
MA141WATX
D402
RB411DT147
D401
DIFS4
OPTICAL PICKUP
CN101
FOCUS
COIL
TRACKING
COIL
IC101
AN8832SBE1
SERVO AMP
IC501
MN662740RE
SERVO PROCESSOR/
DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER
& D/A CONVERTER
S501
(ANTI-SHOCK)
MEMORY)
S502
(HIGH FILTER)
TP101
(RF)
TP102
(VREF)
F=4.2336MHz
F=33.8688MHz
F=16.9344MHz
X501
(33.87MHz)
PLAY
T=13ms.
T=16ms.
T=12µs.
T=23µs.
5ms.2V/DIV.
0.5µs.0.5V/DIV.
1ms.0.5V/DIV.
2ms.0.1V/DIV.
1KHz,0dB

9 10 11 12 13 14 15 16 17 18 19

Q13 FMG6T148 START DET.

IC11 AN8819FB DC-DC CONVERTER/ MOTOR & COIL DRIVE

Q12,14 2SD1302STTA SWITCHING

Q11 2SD1302STTA REGULATOR

Q34 UN5213TX CHARGE CONT.

Q33 2SB1218QRS TX CHARGE CONT.

Q32 2SD1819QRSTX CHARGE CONT.

Q31 2SD1758TLPQR CHARGE CONT.

Q35,36 2SD1819QRSTX CHARGE CONT.

Q15 UN5215TX SWITCHING

POWER SUPPLY VOLTAGE ADJ.

S201 SHORT LAND

S201(LASER ON/OFF

Q202 2SB1218QRSTX LASER POWER DRIVE

Q201 2SB970RSTX LASER POWER DRIVE

Q401 2SB970RSTX POWER SUPPLY

Q907 FMG6T148 MUTING CONT.

Q906 UN5114TX MUTING CONT.

Q901 2SD1819QRSTX SWITCHING (REMOTE)

Q705 FMG4T148 SWITCHING

Q603 FMG4T148 MUTING

Q601,602 2SD1328RSTTX MUTING

Q703 FMG6T148 SWITCHING

Q701,702 2SD1328RSTTX MUTING

IC701 NJM3415MTE1 HEADPHONES AMP

IC502 SM-5855AF SHOCK PROOF CONTROLLER

IC503 UPD4244GIRJE 4M DRAM

S501 (ANTI-SHOCK) MEMORY

S502 (HIGH FILTER)

CN11 DC IN 4.5V

CN12

CN14

CN13

2"AA"SIZE BATTERIES 3V

OPTIONAL RECHARGEABLE BATTERIES (SH-CDB8D111.2x2

CN601 OUT (#3.5)

CN701 HEADPHONES 16Ω (#3.5)

ICP11 SRUN50T25

D11 DIFS4

D401 DIFS4

D402 RB411DT147

D517 MA110TX

D202 MA110TX

D201 RB411DT147

D902 MA143TX

D901 MA141WKTX

D31 MA143TX

D012 MA8039TX

TP103 TP104

F=16.9344MHz

PLAY 2.1V p-p 1KHz,0dB

VOLUME CENTER PLAY 1KHz,0dB 1V p-p

PLAY 1KHz,0dB 1V p-p

■ SCHEMATIC DIAGRAM

(Parts list on pages 31, 32, 34, 35)

(This schematic diagram may be modified at any time with development of new technology.)

Notes:

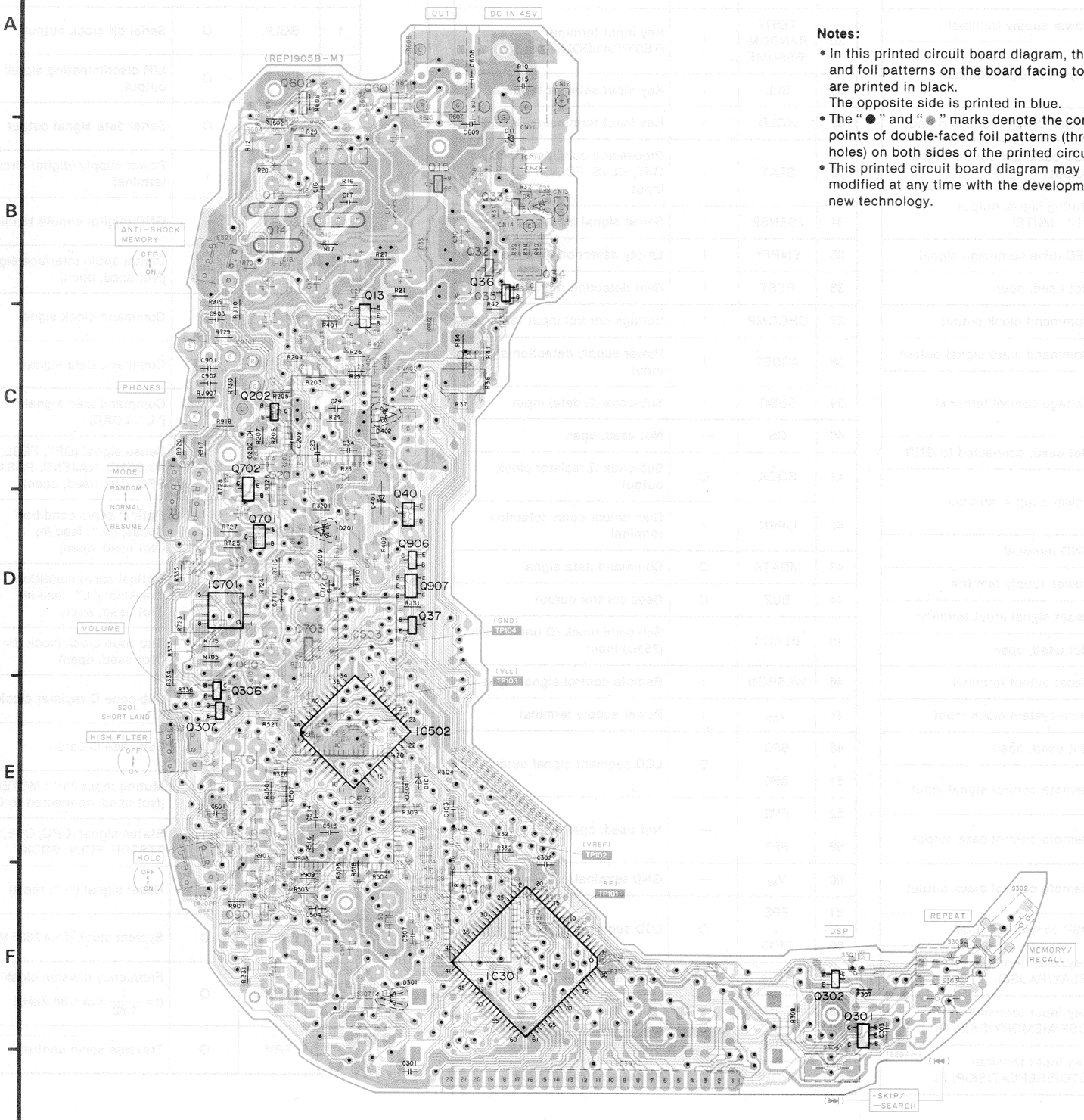
- **S201** : Laser ON/OFF switch in "OFF" position. (It turns "ON" with disc holder closed.)
- **S202** : Rest detector in "OFF" position. (It turns "ON" when optical pickup comes to innermost periphery.)
- **S301** : DSP selector. (OFF → HALL → LIVE → Church → S-XBS)
- **S302** : Memory/recall (MEMORY/RECALL) switch.
- **S303, S306**: Skip/search (I◀◀ -SKIP/-SEARCH ▶▶I) switches. (S303: I◀◀, S306: ▶▶I)
- **S304** : Stop/OPR off (■/OPR OFF) switch.
- **S305** : Repeat (REPEAT) switch.
- **S307** : Play/pause (▶ ▮▮) switch.
- **S308** : Play mode selector (MODE) in "NORMAL" position. (RESUME ↔ NORMAL ↔ RANDOM)
- **S309** : Hold (HOLD) switch in "OFF" position.
- **S501** : Anti-shock memory (ANTI-SHOCK MEMORY) switch in "OFF" position.
- **S502** : High filter (HIGH FILTER) switch in "OFF" position.
- The voltage value and waveforms are the reference voltage of this measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of GND terminal (DC IN Jack). Accordingly, there may arise some errors in the voltage values and waveforms depending upon the internal impedance of the tester or measuring unit.
  * The parenthesized is the voltage for test disc (1 kHz, L+R, 0 dB) in play mode, and the other, for no disc in stop mode.
  * AC adaptor is used for power supply.
- ▬▬ : Positive voltage lines.
- ⟿ : Audio signal lines.
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution!

IC and LSI are sensitive to static ellectricity.
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminium foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

■ PRINTED CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



Notes:

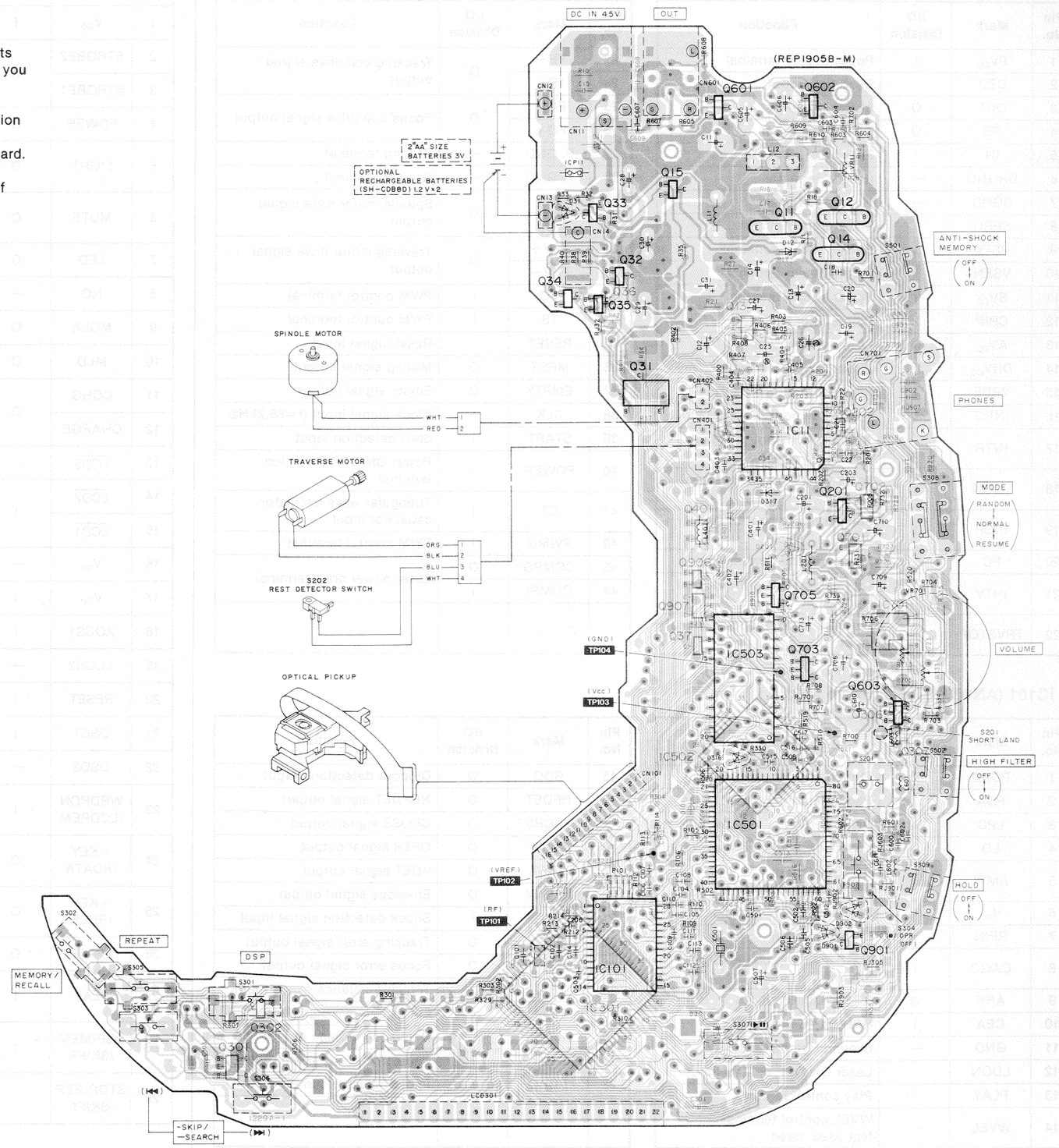
- In this printed circuit board diagram, the parts and foil patterns on the board facing toward you are printed in black.
  The opposite side is printed in blue.
- The "● " and " ◉ " marks denote the connection points of double-faced foil patterns (through holes) on both sides of the printed circuit board.
- This printed circuit board diagram may be modified at any time with the development of new technology.

2 3 4 5 6 7 8 9 10 11

RCUIT BOARD AND WIRING CONNECTION DIAGRAM

Notes:

- In this printed circuit board diagram, the parts and foil patterns on the board facing toward you are printed in black.
  The opposite side is printed in blue.
- The " ● " and " ◎ " marks denote the connection points of double-faced foil patterns (through holes) on both sides of the printed circuit board.
- This printed circuit board diagram may be modified at any time with the development of new technology.



Pin No.	Mark	I/O Division	Function
43	WVEL	O	Double velocity status signal ("H": double) (Not used, open)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias terminal (Not used, connected to GND)
47	DSLF	I/O	DSL loop filter terminal
48	PLLF	I/O	PLL loop filter terminal
49	VCOF	I	VCO loop filter terminal (Not used, connected to $AV_{DD}2$)
50	$AV_{DD}2$	I	Power supply (analog circuit) terminal (2)
51	$AV_{SS}2$	—	GND (analog circuit) terminal
52	FS384	O	384fs (16.9344MHz) output (Not used, open)
53	PCK	O	PLL extract clock (f=4.3218MHz) (Not used, open)
54	TROF	O	Tracking servo OFF signal (Not used, open)
55	SUBC	O	Sub-code serial output data (Not used, open)
56	SBCK	I	Sub-code serial input clock (Not used, open)
57	V_{SS}	—	GND terminal
58	X1	I	Crystal oscillator terminal (f=16.9344MHz)
59	X2	O	
60	V_{DD}	I	Power supply terminal
61	TRVSTOP	O	Traverse motor stop control terminal
62	CLDCK	O	Sub-code frame clock signal (f CLDCK=7.35kHz: Normal) (Not used, open)

Pin No.	Mark	I/O Division	Function
63	FCLK	O	Crystal frame clock (Not used, open)
64	IPFLAG	O	Interpolation flag terminal
65	FLAGO	O	Flag terminal
66	CLVS	O	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo) (Not used, open)
67	CRC	O	Sub-code CRC check terminal ("H": OK, "L": NG)
68	DEMPHA	O	De-emphasis ON signal ("H": ON) (Not used, open)
69	FLAG6	O	Flag terminal
70	SEL	I	Not used, connected to GND
71	TEST	I	Test terminal (Normal: "H")
72	$AV_{DD}1$	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	Lch audio signal
74	$AV_{SS}1$	—	GND (analog circuit) terminal (1)
75	OUTR	O	Rch audio signal
76	RSEL	I	Polarity direction control terminal of RF signal (Not used, connected to power supply)
77	CSEL	I	Frequency control terminal of crystal oscillator (Not used, connected to GND)
78	ISRDATA	I	Serial data signal input
79	ILRCK	I	L/R discriminating signal input
80	IBCLK	I	Serial bit clock input

• IC502 (SM-5855AF): Shock proof controller

Pin No.	Mark	I/O Division	Function
1	V_{DD}	I	Power supply terminal
2	UC1	I	Key input terminal (ANTI-SHOCK MEMORY)
3	UC2	I	Key input terminal (HIGH FILTER)
4	UC3	—	Not used, open
5	UC4	O	Sound quality/sound field control terminal
6	UC5	—	Not used, open
7	NTEST1	—	Test terminal
8	NTEST2		
9	CLK	I	Clock signal input (f = 16.9344MHz)
10	V_{SS}	I	GND terminal
11	YSRDATA	I	Serial data input terminal
12	YLRCK	I	L/R clock input terminal
13	YSCK	I	Serial bit clock input terminal
14	ZSCK	O	Serial bit clock output terminal
15	ZLRCK	O	L/R clock output terminal
16	ZSRDATA	O	Sirial data output terminal
17	YFLAG	I	RAM over-flow flag terminal
18	YFCLK	I	Crystal frame clock input

Pin No.	Mark	I/O Division	Function
19	YBLKCK	I	Sub-cord block clock input terminal
20	NRESET	I	Reset input terminal
21	ZSENSE	O	Microcomputer states output terminal
22	$V_{DD}2$	I	Power supply terminal
23	YDMUTE	I	Mute input terminal
24	YMLD	I	Microcomputer latch clock input terminal
25	YMDATA	I	Microcomputer sirial data input terminal
26	YMCLK	I	Microcomputer shift clock input terminal
27	NOE	O	D-RAM output enable terminal
28	NCAS	O	D-RAM column address strobe terminal
29 ∫ 32	D0 ∫ D3	I/O	D-RAM data input/output terminal
33	NWE	O	D-RAM write enable terminal
34	NRAS	O	D-RAM low address strobe terminal
35 ∫ 44	A0 ∫ A9	O	D-RAM address output terminal

• IC503 (UPD4244G1RJE): 4M DRAM

Pin No.	Mark	I/O Division	Function
1	D0	I/O	Data input/output terminal
2	D1	I/O	Data input/output terminal
3	NWE	I	Write enable terminal
4	NRAS	I	Low address strobe terminal
5	A9	I	Address input terminal
6	A0	I	Address input terminal
7 ∫ 9	A1 ∫ A3	I	Address input terminal

Pin No.	Mark	I/O Division	Function
10	VCC	I	Power supply terminal
11 ∫ 15	A4 ∫ A8	I	Address input terminal
16	NOE	I	Output enable terminal
17	NCAS	I	Column address strobe terminal
18	D3	I/O	Data input/output terminal
19	D2	I/O	Data input/output terminal
20	GND	—	GND terminal

■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*Warning: This product uses a laser diode. Refer to caution statements on page 2.
*ACHTUNG: Die lasereinheit nicht zerlegen.
Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC11	AN8819FB	DC-DC CONV.	
IC101	AN8832SBE1	SERVO AMP	
IC301	SC424656FU	SYSTEM CTL&LCD DRIVE	
IC501	MN662740RE	SERVO PROCESSOR	
IC502	SM-5855AF	SHOCK PROOF CONTROLLER	
IC503	UPD4244G1RJE	4M DRAM	
IC701	NJM3415MTE1	HEADPHONES AMP	
		TRANSISTOR(S)	
Q11, 12	2SD1302STTA	TRANSISTOR	
Q13	FMG6T148	TRANSISTOR	
Q14	2SD1302STTA	TRANSISTOR	
Q15	UN5215TX	TRANSISTOR	
Q31	2SD1758TLPQR	TRANSISTOR	
Q32	2SD1819QRSTX	TRANSISTOR	
Q33	2SB1218QRSTX	TRANSISTOR	
Q34	UN5213TX	TRANSISTOR	
Q35, 36	2SD1819QRSTX	TRANSISTOR	
Q37	UN5114TX	TRANSISTOR	
Q201	2SB970RSTX	TRANSISTOR	
Q202	2SB1218QRSTX	TRANSISTOR	
Q301	FMG8T99	TRANSISTOR	
Q302	DTA143TUT107	TRANSISTOR	
Q306, 307	2SD1819QRSTX	TRANSISTOR	
Q401	2SB970RSTX	TRANSISTOR	
Q601, 602	2SD1328QRSTX	TRANSISTOR	
Q603	FMG4T148	TRANSISTOR	
Q701, 702	2SD1328QRSTX	TRANSISTOR	
Q703	FMG6T148	TRANSISTOR	
Q705	FMG4T148	TRANSISTOR	
Q901	2SD1819QRSTX	TRANSISTOR	
Q906	UN5114TX	TRANSISTOR	
Q907	FMG6T148	TRANSISTOR	
		DIODE(S)	
D11	D1FS4	DIODE	
D12	MA8039TX	DIODE	
D31	MA143TX	DIODE	
D101	MA110TX	DIODE	
D201	RB411DT147	DIODE	
D202	MA110TX	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D301	MA141WKTX	DIODE	
D316	MA141WATX	DIODE	
D317	MA110TX	DIODE	
D401	D1FS4	DIODE	
D402	RB411DT147	DIODE	
D901	MA141WKTX	DIODE	
D902	MA143TX	DIODE	
		IC PROTECTOR(S)	
ICP11	SRUN50T25	IC PROTECTOR	⚠
		VARIABLE RESISTOR(S)	
VR11	EVNDXAA00B33	POWER SUPPLY VOLTAGE ADJ.	
VR701	EVUAMAT43C54	VOLUME	
		COIL(S)	
L11	RLQB330KT-M	COIL	
L12	RLZ0028T-M	COIL	
L201	RLQB471KT-K	COIL	
L401	RLQB330KT-M	COIL	
L601-603	RLBN102V-Y	COIL	
		OSCILLATOR(S)	
X501	RSXZ33M8M01T	OSCILLATOR(33.8688MHz)	
		LCD(S)	
LCD301	RSL5112-L	LCD	
		SWITCH(ES)	
S201	RSH1A91ZA-A	LASER ON/OFF	
S202	SSHD5	REST DETECTOR	
S301	RSG0027-A	DSP	
S302	RSG0027-A	MEMORY/RECALL	
S303	EVQPJHD5K	SKIP/SEARCH(B)	
S304	RSG0024-A	STOP/OPR OFF	
S305	RSG0027-A	REPEAT	
S306	EVQPJHD5K	SKIP/SEARCH(F)	
S307	RSG0024-A	PLAY/PAUSE	
S308	ESD11H230	MODE	
S309	ESD11H220	HOLD	

Ref. No.	Part No.	Part Name & Description	Remarks
S501	ESD11H220	ANTI-SHOCK MEMORY	
S502	ESD11H220	HIGH FILTER	
		CONNECTOR(S) AND JACK(S)	
CN11	RJJ4303-1	DC IN JACK	
CN12, 13	RJC93015	BATTERY TERMINAL(+/-)	
CN14	RJH5102-1	RECHARGEABLE BATT. TERMINAL	
CN101	RJS1A6116	CONNECTOR(16P)	
CN401	RJT068W04V	CONNECTOR(4P)	
CN402	RJT068W02V	CONNECTOR(2P)	
CN601	RJJD3S5ZB-C	OUT JACK	
CN701	RJJ36T02-C	HEADPHONES JACK	
		<PRINATED CIRCUIT BOARD	
		ASS'Y>	
PCB1	REP1905B-M	MAIN P.C.B.	(RTL)

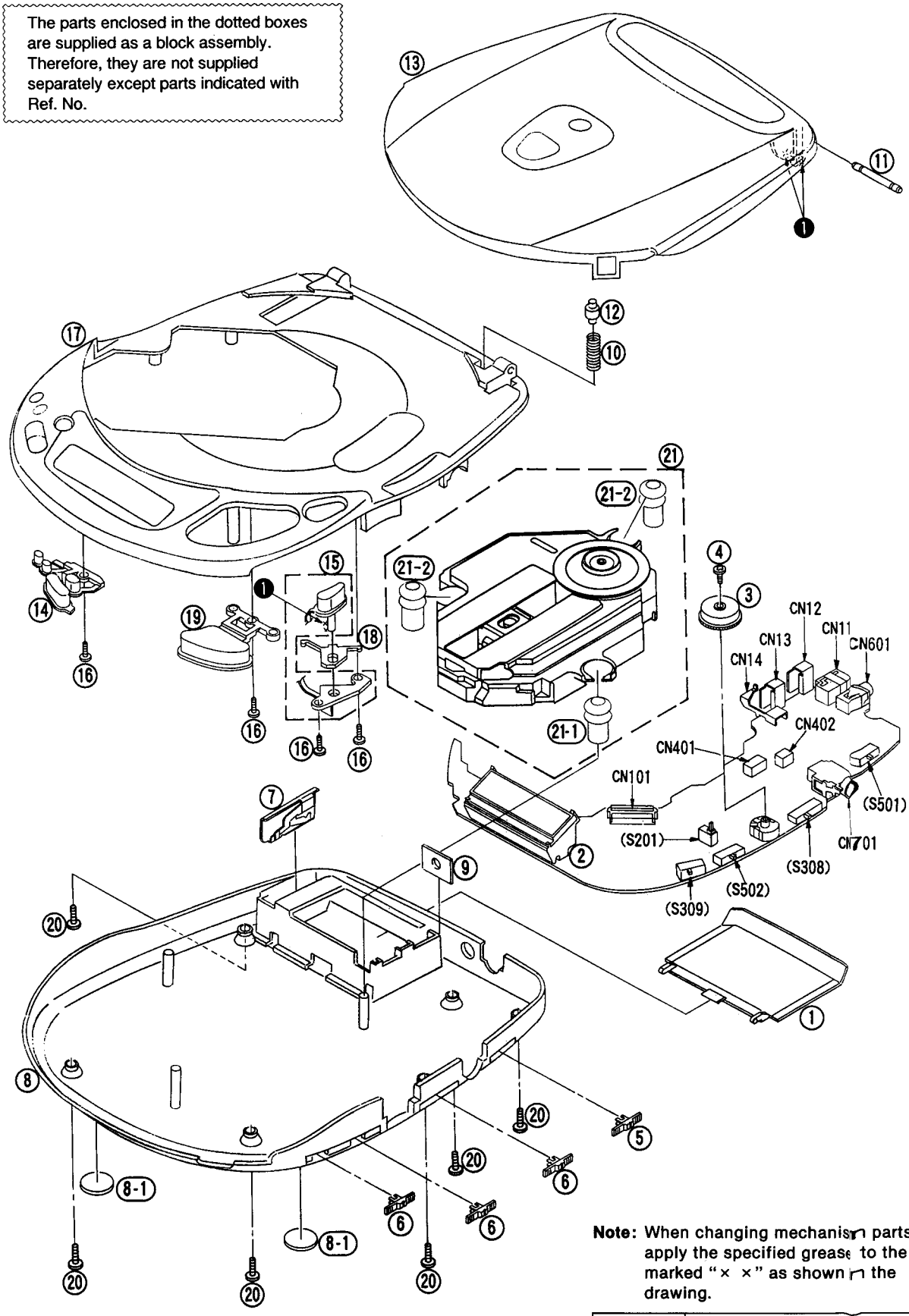
Note:

The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RKK0065-K	BATTERY COVER	
2	RJF0020	LCD HOLDER	
3	SBND90ZKDA	VOLUME KNOB	
4	XQN17+C3FZ	SCREW	
5	RGV0120-K	ANTI-SHOCK MEMORY KNOB	
6	RGV0120-1K	MODE/H.FILTER/HOLD KNOB	
7	RJC93020	COMMON BATTERY TERMINAL	
8	RFKJLXP370E	BOTTOM CABINET ASS'Y	(E)
8	RFKJLXP370EB	BOTTOM CABINET ASS'Y	(EB, GC, GN)
8	RFKJLXP370EG	BOTTOM CABINET ASS'Y	(EG)
8-1	RKA0063-K	FOOT	
9	RMA0677	REAR ORNAMENT	
10	RMB0351	OPEN SPRING	
11	RMS0105-1	SHAFT	
12	RMS0462	PUSH SHAFT	
13	RYF0284G-K	CD COVER ASS'Y	
14	RGU1073-H	OPERATION BUTTON(2)	
15	RGU1074-H	OPEN BUTTON	
16	RHE5079YA	SCREW	
17	RFKKLXP370E	INTERMEDIATE CABINET ASS'Y	
18	RML0344	LOCK LEVER	
19	RYQ0126A-K	OPERATION BUTTON(1) ASS'Y	
20	XTN17+6GFZ	SCREW	
21	RAE0132Z	TRAVERSE DECK	
21-1	SHGD157	FLOATING RUBBER(1)	
21-2	SHGD165	FLOATING RUBBER(2)	

■CABINET PARTS LOCATION

The parts enclosed in the dotted boxes are supplied as a block assembly. Therefore, they are not supplied separately except parts indicated with Ref. No.



Note: When changing mechanism parts, apply the specified grease to the areas marked "× ×" as shown in the drawing.

Ref. No.	Part No.
❶	RFKXPG67

■ RESISTORS AND CAPACTORS

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R10	ERJ6GEYJ102V	1/10W 1K
R11	ERJ3GEYJ153V	1/16W 15K
R12	ERJ6GEYJ562V	1/10W 5.6K
R16	ERJ6GEYJ100	1/10W 10
R17	ERJ6GEYJ152V	1/10W 1.5K
R18	ERJ3GEYJ101V	1/16W 100
R21	ERJ6GEYJ221V	1/10W 220
R22	ERJ3GEYJ822V	1/16W 8.2K
R23	ERJ6GEYJ223V	1/10W 22K
R24	ERJ6GEYJ474V	1/10W 470K
R25	ERJ6GEYJ473V	1/10W 47K
R26	ERJ6GEYJ104V	1/10W 100K
R27	ERJ6GEYJ473V	1/10W 47K
R28, 29	ERJ6GEYJ220	1/10W 22
R31	ERJ3GEYJ102V	1/16W 1K
R32	ERJ3GEYJ154V	1/16W 150K
R33	ERJ3GEYJ104V	1/16W 100K
R34	ERJ12YJ1R2H	1/2W 1.2
R35	ERJ3GEYJ151V	1/16W 150
R36	ERJ6GEYJ392V	1/10W 3.9K
R37	ERJ6GEYJ332V	1/10W 3.3K
R38	ERJ3GEYJ102V	1/16W 1K
R39	ERJ3GEYJ333V	1/16W 33K
R40	ERJ3GEYJ681V	1/16W 680
R41, 42	ERJ6GEYJ103V	1/10W 10K
R101	EXBV8V223J	1/8W 22K
R105	ERJ3GEYJ333V	1/16W 33K
R106	ERJ3GEYJ153V	1/16W 15K
R109	ERJ3GEYJ223V	1/16W 22K
R110	ERJ3GEYJ124V	1/16W 120K
R111	ERJ6GEYJ103V	1/10W 10K
R112	ERJ3GEYJ103V	1/16W 10K
R113	ERJ3GEYJ101V	1/16W 100
R114	ERJ3GEYJ330V	1/16W 33
R201	ERJ3GEYJ102V	1/16W 1K
R202	ERJ3GEYJ122V	1/16W 1.2K
R203, 204	ERJ6GEYJ224V	1/10W 220K
R205	ERJ6GEYJ222V	1/10W 2.2K
R206	ERJ6GEYJ333V	1/10W 33K
R207	ERJ6GEYJ473V	1/10W 47K
R208	ERJ3GEYJ223V	1/16W 22K
R209	ERJ6GEYJ223V	1/10W 22K
R212	ERJ3GEYJ104V	1/16W 100K
R213	ERJ3GEYJ474V	1/16W 470K
R214	ERJ3GEYJ124V	1/16W 120K
R301-303	ERJ3GEYJ473V	1/16W 47K
R304	ERJ6GEYJ103V	1/10W 10K
R307	ERJ6GEYJ182V	1/10W 1.8K
R308	ERJ6GEYJ223V	1/10W 22K
R309	ERJ6GEYJ102V	1/10W 1K
R310	ERJ3GEYJ102V	1/16W 1K
R326	ERJ6GEYJ224V	1/10W 220K
R327	ERJ6GEYJ180V	1/10W 18
R329	ERJ3GEYJ473V	1/16W 47K
R330	ERJ3GEYJ683V	1/16W 68K
R331	ERJ6GEYJ102V	1/10W 1K
R332	ERJ6GEYJ103V	1/10W 10K
R333-336	ERJ6GEYJ104V	1/10W 100K
R400	ERJ3GEYJ392V	1/16W 3.9K
R401	ERJ6GEYJ224V	1/10W 220K
R402	ERJ3GEYJ103V	1/16W 10K
R403	ERJ3GEYJ823V	1/16W 82K
R404, 405	ERJ3GEYJ682V	1/16W 6.8K
R406	ERJ3GEYJ473V	1/16W 47K
R407	ERJ3GEYJ272V	1/16W 2.7K
R408	ERJ3GEYJ393V	1/16W 39K
R409	ERJ6GEYJ470V	1/10W 47
R502	ERJ3GEYJ103V	1/16W 10K
R503	ERJ6GEYJ473V	1/10W 47K
R504	ERJ6GEYJ683V	1/10W 68K
R505	ERJ6GEYJ471V	1/10W 470
R506	ERJ6GEYJ821V	1/10W 820
R507	ERJ6GEYJ100	1/10W 10
R510	ERJ3GEYJ220V	1/16W 22
R516	ERJ6GEYJ561V	1/10W 560
R518	ERJ6GEYJ683V	1/10W 68K
R519	ERJ6GEYJ5R6V	1/10W 5.6
R520	ERJ3GEYJ102V	1/16W 1K
R521	ERJ6GEYJ102V	1/10W 1K
R522	ERJ3GEYJ474V	1/16W 470K
R601, 602	ERJ3GEYJ681V	1/16W 680
R603, 604	MCR03PZHJ561	1/16W 560
R605	ERJ3GEYJ473V	1/16W 47K
R606	ERJ6GEYJ473V	1/10W 47K
R607, 608	ERJ3GEYJ102V	1/16W 1K
R609, 610	ERJ3GEYJ332V	1/16W 3.3K
R611	ERJ3GEYJ471V	1/16W 470
R700	ERJ3GEYJ100V	1/16W 10
R701, 702	ERJ3GEYJ122V	1/16W 1.2K
R703	ERJ6GEYJ102V	1/10W 1K
R704	ERJ3GEYJ102V	1/16W 1K
R705	ERJ6GEYJ473V	1/10W 47K
R706	ERJ3GEYJ473V	1/16W 47K
R707, 708	ERJ3GEYJ682V	1/16W 6.8K
R715, 716	ERJ6GEYJ822V	1/10W 8.2K
R723, 724	ERJ6GEYJ333V	1/10W 33K
R725, 726	ERJ6GEYJ180V	1/10W 18
R727, 728	ERJ6GEYJ1R5V	1/10W 1.5
R729, 730	ERJ6GEYJ104V	1/10W 100K
R731, 732	MCR03PZHJ561	1/16W 560
R739	ERJ3GEYJ181V	1/16W 180
R901	ERJ6GEYJ274V	1/10W 270K
R907-909	ERJ6GEYJ224V	1/10W 220K
R910	ERJ6GEYJ334V	1/10W 330K
R917, 918	ERJ6GEYJ821V	1/10W 820
R919	ERJ6GEYJ221V	1/10W 220
R920	ERJ6GEYJ101V	1/10W 100
		CHIP JUMPERS
RJ10	ERJ6GEY0R00V	CHIP JUMPER
RJ31	ERJ6GEY0R00V	CHIP JUMPER
RJ32	ERJ3GEY0R00V	CHIP JUMPER
RJ201	ERJ6GEY0R00V	CHIP JUMPER
RJ304	ERJ6GEY0R00V	CHIP JUMPER
RJ305	ERJ3GEY0R00V	CHIP JUMPER
RJ501	ERJ6GEY0R00V	CHIP JUMPER
RJ602, 603	ERJ6GEY0R00V	CHIP JUMPER
RJ701	ERJ3GEY0R00V	CHIP JUMPER
RJ901, 902	ERJ3GEY0R00V	CHIP JUMPER
RJ903	ERJ6GEY0R00V	CHIP JUMPER
RJ907	ERJ6GEY0R00V	CHIP JUMPER
		CAPACITORS
C11	ECEA1AKA470I	10V 47U
C12	ECEA1AKS470	10V 47U
C13	RCE1ASC470IX	10V 47U
C14	ECEA0JKA101I	6.3V 100U
C15	ECUV1C104ZFN	16V 0.1U
C16	ECUVNC105ZFM	16V 1U
C17	ECUV1H470KCN	50V 47P
C18	ECUV1E103KBV	25V 0.01U
C19	ECEA0JKA220	6.3V 22U
C20	ECEA1EKA4R7I	25V 4.7U
C21	ECUV1E223KBV	25V 0.022U
C22	ECUV1C104KBN	16V 0.1U
C23	ECUV1E103KBN	25V 0.01U
C24	ECUV1H391KBN	50V 390P
C25	ECEA1VKN2R2I	35V 2.2U
C26	ECEA1HKN010I	50V 1U
C27	ECEA1EKA4R7I	25V 4.7U
C28-31	ECEA08KA271I	8V 270U
C34	ECUV1H470KCN	50V 47P

Ref. No.	Part No.	Values & Remarks
C101, 102	ECUV1C104KBN	16V 0.1U
C103	ECUV1E183KBN	25V 0.018U
C104	ECUV1E223KBV	25V 0.022U
C105	ECUV1C333KBV	16V 0.033U
C106	ECUV1H222KBV	50V 2200P
C107	ECUV1H152KBV	50V 1500P
C108	ECUV1C473KBN	16V 0.047U
C109	ECUV1C333KBV	16V 0.033U
C110	ECUV1E103KBV	25V 0.01U
C111	ECUV1C333KBV	16V 0.033U
C112	ECUV1H331KBV	50V 330P
C113, 114	ECUV1C104ZFV	16V 0.1U
C201	RCE0JSA470IX	6.3V 47U
C202	ECUVNC105ZFN	16V 1U
C203	ECEA1HKA2R2I	50V 2.2U
C206	ECUV1H332KBV	50V 3300P
C301	ECUV1C104ZFN	16V 0.1U
C302, 303	ECUVNC105ZFN	16V 1U

Ref. No.	Part No.	Values & Remarks
C307	ECUV1C104KBN	16V 0.1U
C401	ECEA1AKA470I	10V 47U
C402	RCE1ASA330IX	10V 33U
C403	ECUV1C104ZFV	16V 0.1U
C404	ECUVNC105ZFN	16V 1U
C405	ECUV1C333KBV	16V 0.033U
C501, 502	ECUV1H070DCV	50V 7P
C503	ECUV1H561KBV	50V 560P
C504	ECUV1C104KBN	16V 0.1U
C505	ECUV1E223KBV	25V 0.022U
C506	ECUV1C224KBN	16V 0.22U
C507	RCE1ASL330IX	10V 33U
C508	ECUV1C104ZFV	16V 0.1U
C512	ECUV1C104ZFV	16V 0.1U
C513	ECUV1H070DCN	50V 7P
C514	ECUV1H102KBN	50V 1000P
C515	ECUV1H332ZFV	50V 3300P
C516, 517	ECUV1C104ZFV	16V 0.1U

Ref. No.	Part No.	Values & Remarks
C600	ECUV1C104ZFV	16V 0.1U
C601	ECUV1H102KBN	50V 1000P
C602	ECUV1H102KBV	50V 1000P
C603, 604	ECUV1H272KBV	50V 2700P
C605, 606	ECEA1CPK100I	16V 10U
C607	ECUV1H681KBV	50V 680P
C608	ECUV1H681KBN	50V 680P
C609	ECUV1C104ZFN	16V 0.1U
C610	ECEA0JPK101I	6.3V 100U
C611	ECUV1C104ZFV	16V 0.1U
C706	ECEA0JKA221I	6.3V 220U
C709, 710	ECEA0GPK221I	4V 220U
C711, 712	ECST0JY106RR	6.3V 10U
C713	ECEA0JPK101I	6.3V 100U
C901, 902	ECUV1H332ZFN	50V 3300P
C903	ECUV1C104ZFN	16V 0.1U

■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

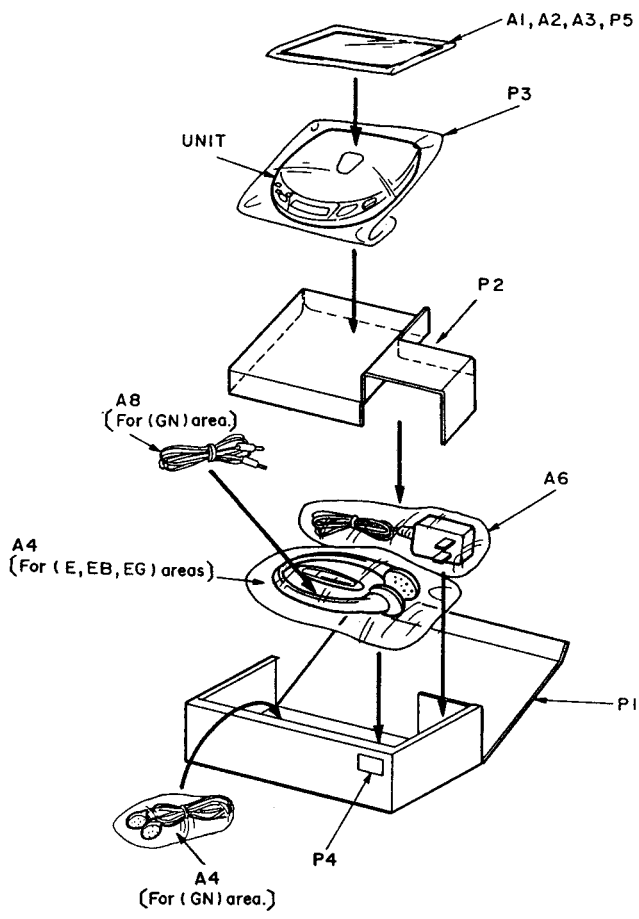
Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIAL	
P1	RPKO506	PACKING CASE	
P2	RPQ0448-1	PAD	
P3	RPF0111	PROTECTION BAG(UNIT)	
P4	SQZD3	AREA LABEL	(E)
P4	SQZD6	AREA LABEL	(EG)
P4	SQZD7	AREA LABEL	(EB)
P4	RQLA0066	AREA LABEL	(GC)
P4	RQLA0067	AREA LABEL	(GN)
P5	RPF0046	PROTECTION BAG(F.B.)	
		ACCESSORIES	
A1	RFKSLXP370E	INSTRUCTION MANUAL ASS'Y	(E)

Ref. No.	Part No.	Part Name & Description	Remarks
A1	RQT2570-B	INSTRUCTION MANUAL	(EB)
A1	RFKSLXP370EG	INSTRUCTION MANUAL ASS'Y	(EG)
A1	RFKSLXP370GC	INSTRUCTION MANUAL ASS'Y	(GC)
A1	RFKSLXP370GN	INSTRUCTION MANUAL ASS'Y	(GN)
A2	RQA0013	WARRANTY CARD	(E, EB, EG)
A2	RQX7433ZA	WARRANTY CARD	(GN)
A3	RQCB0169	SERVICENTER LIST	
A4	RP-HT103DTYS	STEREO HEADPHONES	(E, EB, EG)
A4	RFEV307A-KA	STEREO EARPHONES	(GC, GN)
A5 ※	RKB205ZA-0	EAR PADS	(GC, GN)
A6	RFEA401E-1S	AC ADAPTOR	(E, EG) ⚠
A6	RFEA404B-W	AC ADAPTOR	(EB) ⚠
A6	RFEA402Z-W	AC ADAPTOR	(GC) ⚠
A6	RFEA404A-W	AC ADAPTOR	(GN) ⚠
A7	RJP120ZDS-K	POWER PLUG ADAPTOR	(GC) ⚠
A8	RJL2P001X10	STEREO CONNECTION CABLE	(GC, GN)

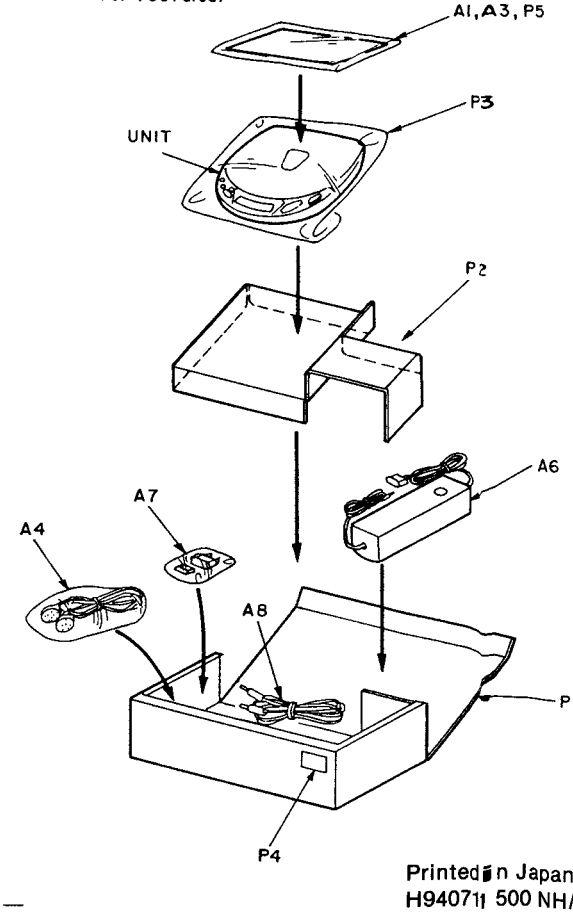
※ This parts is supplied only with replacement parts list.

■ PACKAGING

● For (E, EB, EG, GN) areas.



● For (GC) area.



Printed in Japan
H940711 500 NH/YU/KK

ORDER NO. AD9503017S8

Service Manual

Supplement

COMPACT disc DIGITAL AUDIO

DIGITAL MASH* multi-stage noise shaping

Portable CD Player

SL-XP370

Colour

(K)... Black Type

Area

Suffix for Model No.	Area	Colour
(E)	Europe.	(K)
(EB)	Great Britain.	
(EG)	Germany and Italy.	
(GC)	Asia, Latin America, Middle Near East and Africa.	
(GN)	Oceania.	

Please file and use this supplement manual together with the service manual for Model No. SL-XP370, Order No. AD9407215C8.

Note: This supplement is intended to provide additional information or corrections to the existing service manual for Model No. SL-XP370. Be sure to update your service manual for future reference.

※ MASH is a trademark of NTT.

CHANGES

■ CHANGE IN REPLACEMENT PARTS LIST (SL-XP370 Service Manual: Pages 31, 32, 34, 35.)

Ref. No.	Change of Part No. ORIGINAL → NEW		Part Name & Description	Remarks
INTEGRATED CIRCUIT(S)				
IC502	SM-5855AF	**SM5855A1F**	SHOCK PROOF CONTROLLER	
IC701	NJM3415MTE1	**TDA1308TT**	HEADPHONES AMP	
TRANSISTOR(S)				
Q501	—	**UN5210TX**	TRANSISTOR	Addition
DIODE(S)				
D903	—	**MA141WKTX**	DIODE	Addition
COIL(S)				
L501	—	**RLBN102V-Y**	COIL	Addition
RESISTORS				
R510	ERJ3GEYJ220V	**ERJ3GEYJ470V**	1/16W 47	
R523	—	**ERJ6GEYJ474V**	1/10W 470K	Addition
R524	—	**ERJ6GEYJ153V**	1/10W 15K	Addition
CHIP JUMPERS				
RJ502, 503	—	**ERJ6GEY0R00V**	CHIP JUMPER	Addition
RJ603	ERJ6GEY0R00V	—	CHIP JUMPER	Deletion
RJ901, 902	ERJ3GEY0R00V	—	CHIP JUMPER	Deletion
CAPACITORS				
C24	ECUV1H391KBN	**ECUV1H301JCN**	50V 300PF	
C510	—	**ECUV1C104ZFV**	16V 0.1μF	Addition
C518	—	**ECUV1C224KBN**	16V 0.22μF	Addition
C715, 716	—	**ECUV1H681KBN**	50V 680PF	Addition

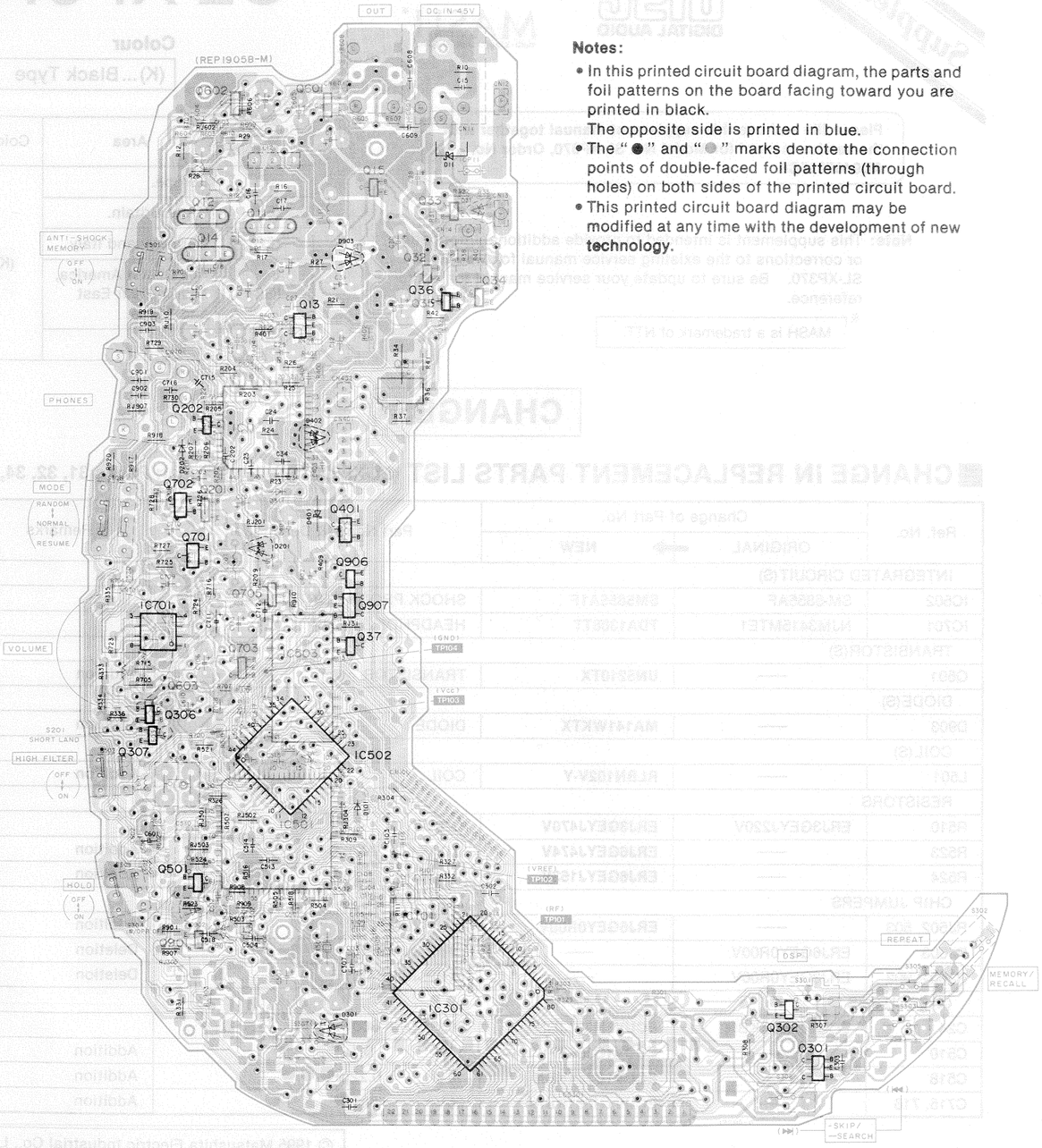
Technics®

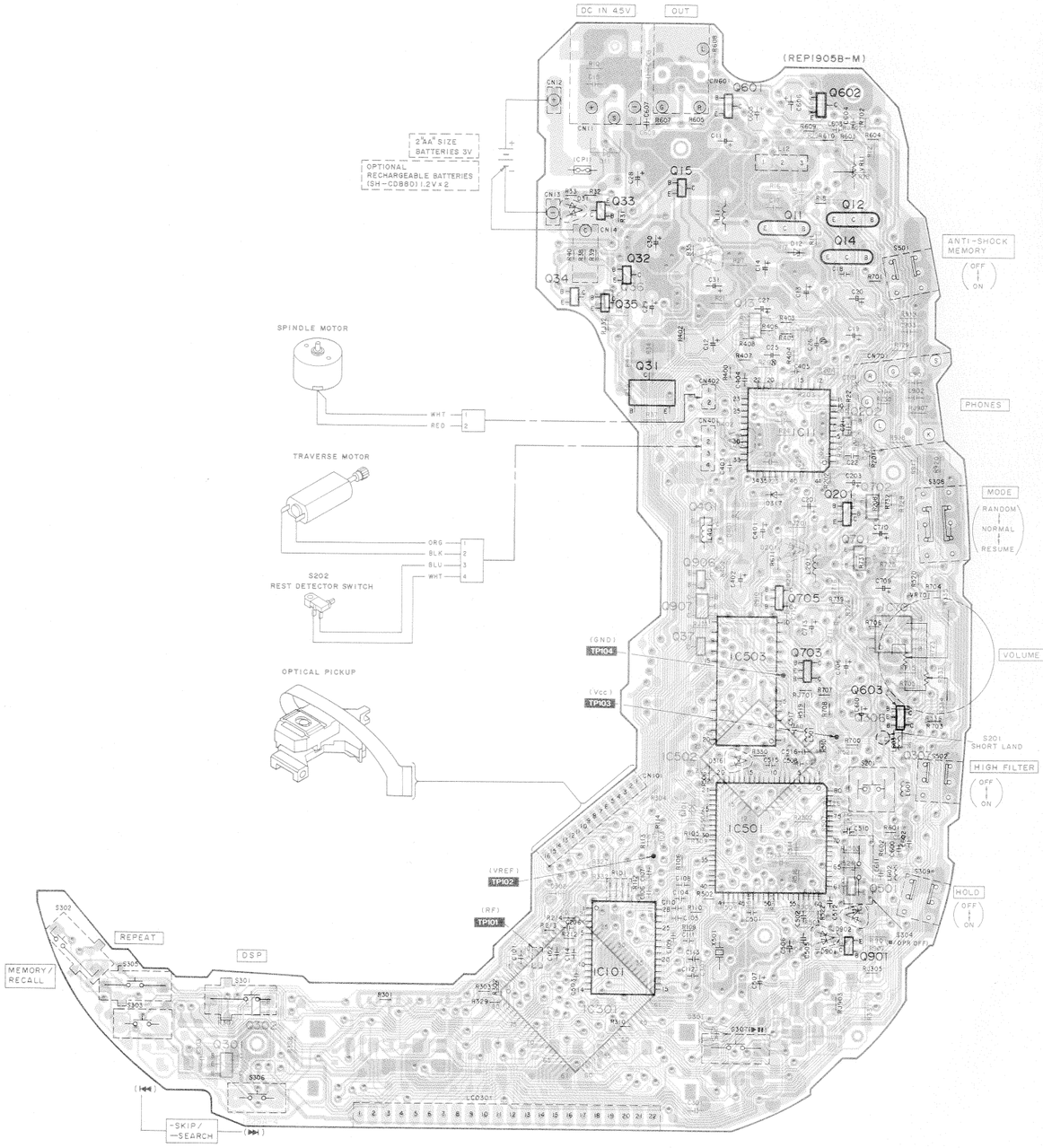
© 1995 Matsushita Electric Industrial Co., Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.

■ PRINTED CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM (SL-XP370 Service Manual: Pages 23～25.)

Notes:

- In this printed circuit board diagram, the parts and foil patterns on the board facing toward you are printed in black.
  The opposite side is printed in blue.
- The " ● " and " ● " marks denote the connection points of double-faced foil patterns (through holes) on both sides of the printed circuit board.
- This printed circuit board diagram may be modified at any time with the development of new technology.

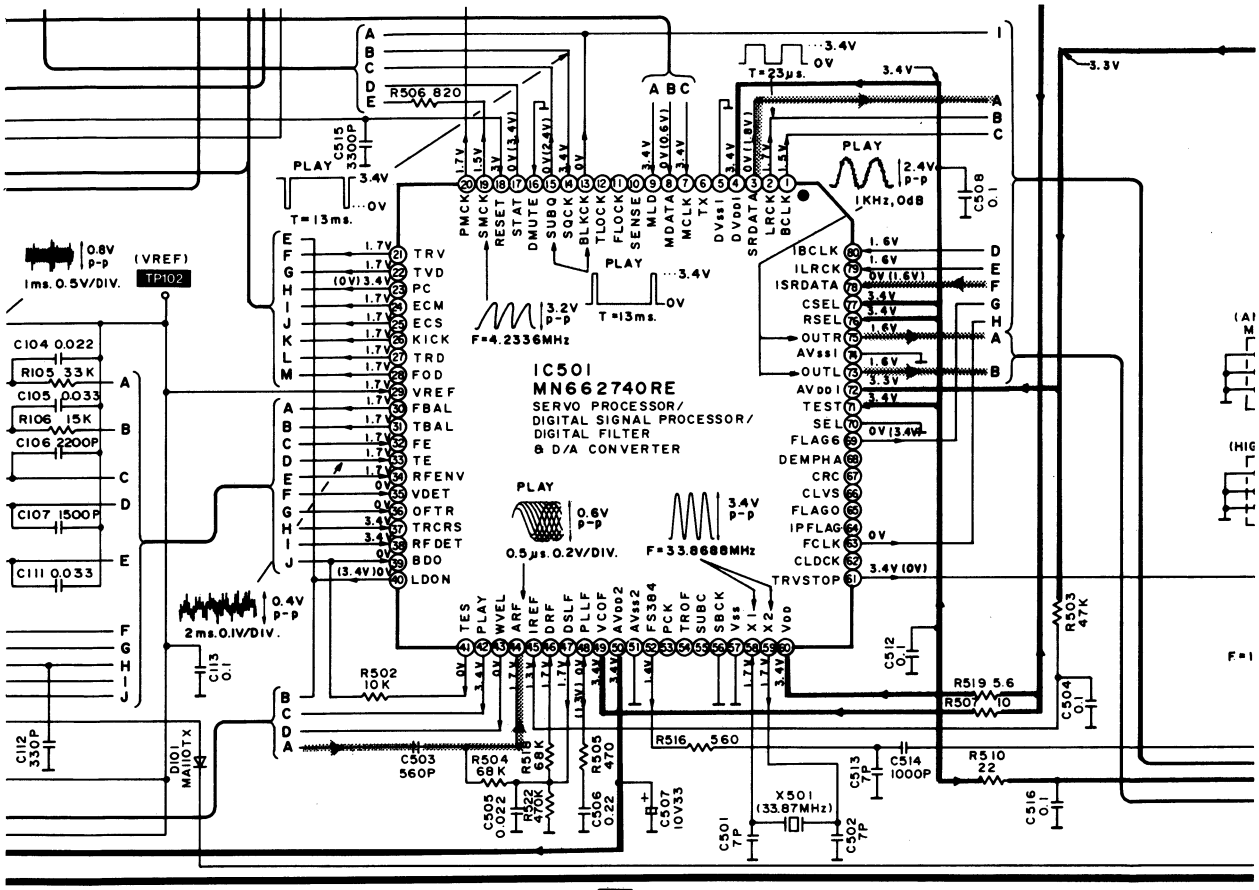




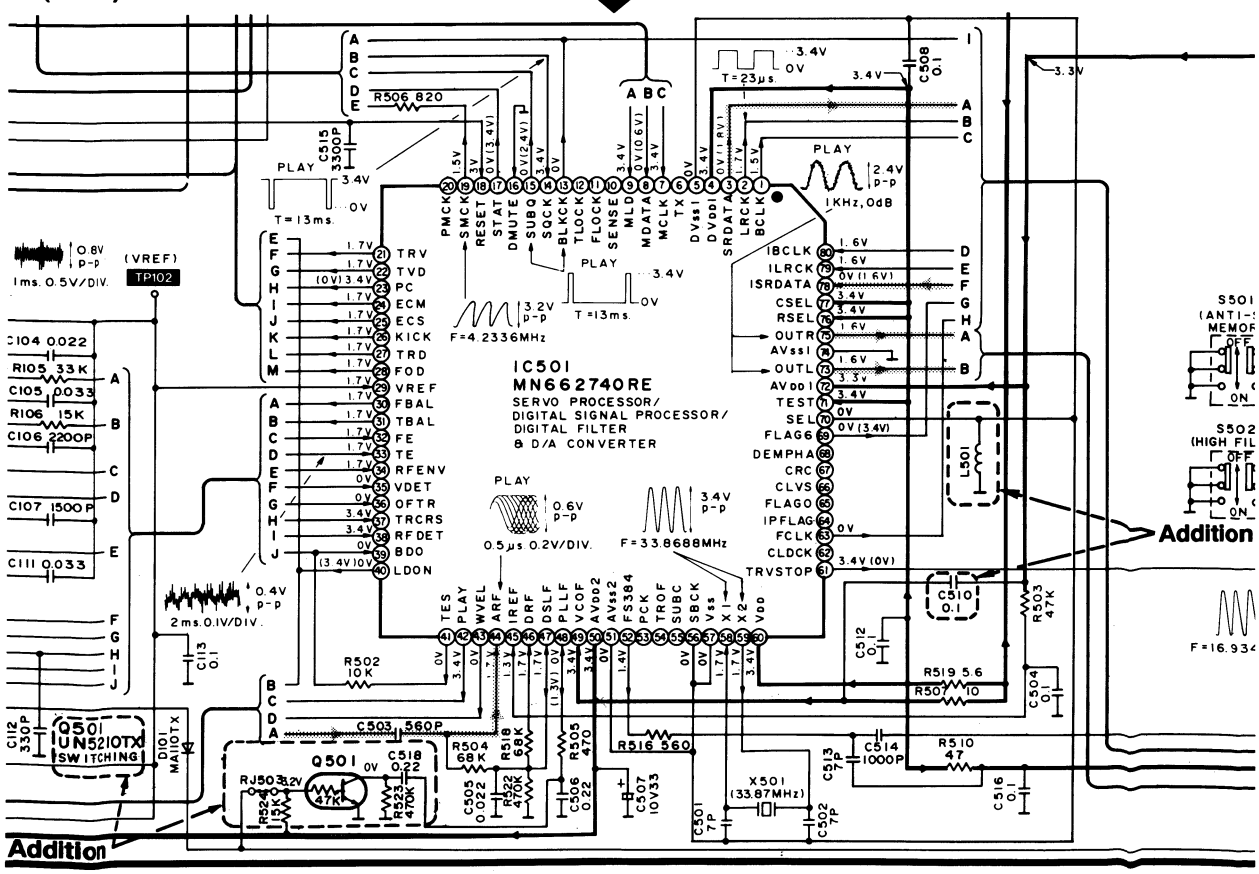
■ SCHEMATIC DIAGRAM (SL-XP370 Service Manual: Pages 19~22.)

(Service Manual: Page 20.)

(ORIGINAL)

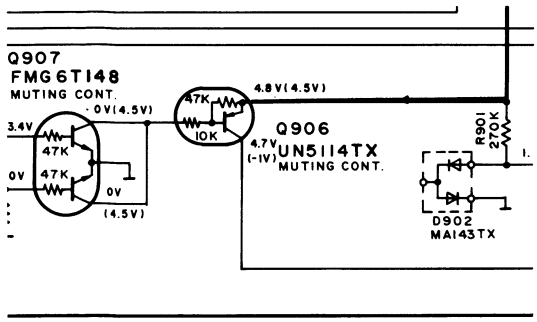


(NEW)

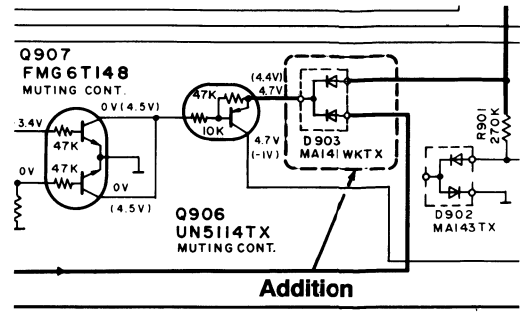


(Service Manual: Page 22.)

(ORIGINAL)

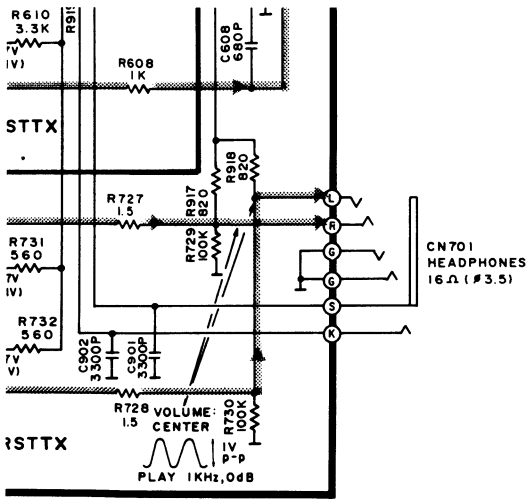


(NEW)

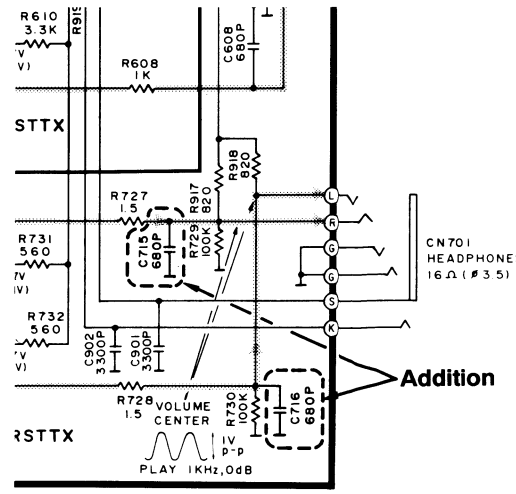


(Service Manual: Page 22.)

(ORIGINAL)

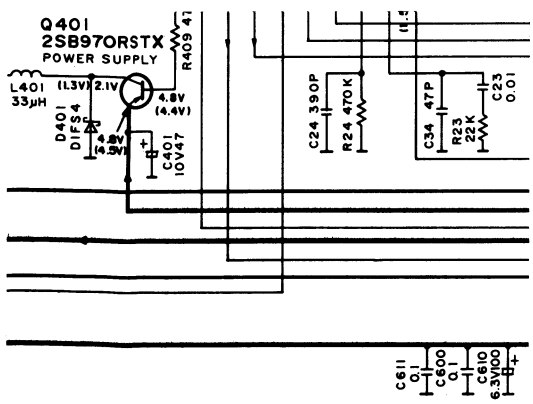


(NEW)

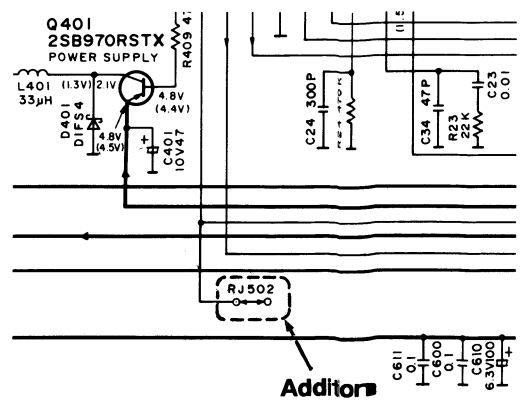


(Service Manual: Page 21.)

(ORIGINAL)



(NEW)



⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Printed in Japan
1995 0410500 HH/SF